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**Computer Mediated Communication  
and Communities of Discourse:  
Learning Together Online**

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Submitted for the degree of Master of Philosophy at The Open University, Milton  
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## **Abstract**

Computer mediated communication (CMC) is a new form of communication that is increasingly being used in academic discourse. This research examines such key issues as how literacy is affected by the use of CMC, how computers can be used to teach collaboratively and the role of CMC in developing written argument. A shift from print-based literacy to interactive electronic-based literacy has the potential to transform the nature of both literacy and pedagogy.

This project employs a Socio-cultural and Discourse Analysis perspective and investigates the use of CMC in post-graduate education and its effect on academic literacy. It also examines how computer mediated collaboration can effectively aid the process of induction into communities of discursive practice.

This study will investigate the dialogical nature of academic discourse and the relationship of CMC to collaborative learning.

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# **1. Introduction**

## **1.1 Introduction**

Online learning is often promoted as the future of higher education. Whilst it may be a little early to mourn the passing of traditional teaching and learning in higher education, there is a new form of communication, which is increasing in prominence within university education. Computer mediated communication (CMC) could well be the preferred medium for future academic discourse.

Despite the proposed future for CMC in education, there is an unwillingness to embrace new methods of pedagogy. With the introduction of any new tool there is an innate tendency to keep using older methods. During 1998/1999, Linda Sax (UCLA) conducted a survey of 34,000 academic staff from 378 institutes of higher education on the use of Information and Communication Technology (ICT). The survey itself shed some doubt on the uptake of the use of ICT in academia. It found that only 35% of those questioned used the Internet to conduct research, while 38% used ICT in classroom teaching. It also showed that 67% of respondents felt regular stress in keeping abreast of ICT developments (CIT Infobits, 1999).

Despite this reticence, subsequent studies have proven the efficacy of ICT in teaching and learning (Wegerif & Hope-Hume, 1999) (Lea, 2000). This thesis uses studies such as these as a basis to examine the nature of Computer Mediated Communication (CMC) in collaborative learning and the establishment of a community of learners amongst postgraduate students. Based on the position that cognition is dialogically and socially constructed, it examines how the dialogical and social processes are made apparent and enhanced through Asynchronous Learning Networks (ALN).

## **1.2 Title of Thesis**

Computer Mediated Communication and Communities of Discourse: Learning Together Online

### **1.3 Broad Research Area**

The research explores the relationship between education, CMC and the role of the development of electronic networks in tertiary education.

### **1.4 The Research Problem**

This research examines dialogue and induction into communities of discursive practice using CMC. It will seek to provide an account of some contemporary practice and to find ways in which academic discursive practices can be further developed using CMC.

Previous research (Crook, 1994), (Dawes, 1997), (Mercer, Wegerif, & Dawes, 1999), (Mercer, 2000), has shown the efficacy of collaborative learning as a teaching and learning tool. However, the efficiency of this method in full-time education is not always shared with part-time or distance learners. These students experience constraints of both time and space in that they may not be able to attend classes or tutorials due to distance, family, work or time demands. These constraints have resulted in exclusion from the kind of participation in collaborative learning that is afforded by face-to-face learning environments

This research examines such key issues as how teaching and learning is affected by the use of CMC, how computers can be used to promote collaborative learning amongst adult learners and the role of CMC in developing written argument.

There is a body of work that suggests that the way in which communication media is used is bound to have an effect on the prevailing cultural infrastructure. All technologies, however, have the potential to be contradictory. It is how that technology is applied within a sociocultural context that will determine the potential of the medium. For instance, this thesis will argue that a shift from print-based literacy to interactive electronic based literacy in a higher education setting has the potential to transform the nature of both literacy and teaching and learning.

This thesis examines the construction of academic discursive practice through the medium of Computer Mediated Communication (CMC).

The affordances of print mediums have led to a monological approach to academic discourse. The nature of CMC is essentially dialogical and, as such, means that affordances relating to it show differences to the monological nature of print.

This thesis argues that CMC has broken down the distinction between talking and writing. It has provided new literacies or a 'secondary orality'. It aims to show, through an analysis of online learning, that the construction of knowledge through CMC provides a return to dialogue at a higher level of mediation than that used in primary orality and reveals the shift from monological to dialogical context and the origin of academic reason.

The study will provide information about the construction of dialogue using CMC. It will further understanding of how an online discourse community works. In addition, this study will contribute to existing knowledge about CMC in learning written argument.

This project employs sociocultural as well as discourse analysis perspectives to examine how computer mediated collaboration can effectively aid the process of induction into communities of discursive practice.

#### **1.4 Research Introduction**

This project is concerned with CMC and its induction into communities of academic discourse.

This study proposes that reasoning develops through the extension of academic discourse and argument via the process of collaborative learning. This investigation will examine social modes of talk negotiated by means of CMC and will be specifically concerned with the social processes involved in its development.



The larger questions to be examined are:

- How does induction into Academic Discursive practice occur?
- Does this process occur dialogically?
- Has the nature of the print medium obscured such a dialogical process?
- Does CMC reveal such a dialogical process?

The research questions are:

1. Is asynchronous CMC an effective tool for induction into a discourse community?
2. Can CMC effectively promote the development of academic argument?
3. Does participation in online learning make contributors construct a community of learners?
4. How does the use of dialogue in CMC collaboratively construct knowledge?

The study will contribute to knowledge in the following areas. It will;

- provide an understanding of the structure of dialogue in CMC,
- provide further insight into how an online discourse community works,
- increase scholarship about computer mediated collaboration in learning written argument.

Although CMC differs from face-to-face dialogue as examined by Mercer, Wegerif, and Dawes, (1999)., it still could prove to be an effective tool for teaching and learning. Both forms of communication, however, require the establishment of ground rules in order to promote effective dialogue.

## **1.5 Outline of Thesis**

### **1.5.1 Chapter 2 Cognition and Thought**

The second chapter summarises both the theoretical background and related research through a review of relevant literature in the fields of teaching and learning, discourse analysis and dialogue. This chapter draws upon a sociocultural approach to cognition. It provides a theoretical background to the thesis in that it presents a literature review

as well as a theoretical overview of issues in the fields of pedagogy, discourse and induction into discursive practices. The chapter assesses what is meant by these terms and further examines the notion of teaching and learning. It introduces the theory of dialogue that is used to underpin the thesis and examines the meaning ascribed to academic argument. It also investigates pedagogical theory and collaborative learning.

The teaching and learning survey includes an historical view of approaches to pedagogical theory, examining Constructivism, Social Constructivism and communities of discursive practice. A comparison with influential theorists in the pedagogical field, such as Piaget and Vygotsky, will form part of the analysis.

Secondly, having introduced the notion of Discursive Practice, the thesis moves on to consider theories of discourse, such as the Formal Linguistic Approach, the Empirical Sociological Approach and the Critical Approach to theories of discourse.

This will be followed by a consideration of theories of dialogue follows drawing upon the theoretical basis of Habermas, Bakhtin, Pearce and Fraser. The consideration of dialogue also embraces social modes of thinking, showing how cognition occurs through intramental thinking.

Finally, the conclusions to the teaching and learning survey are presented. It will be argued that communication and cognition are mediated through the use of tools including language and dialogue and that the use of these tools is dependant upon the sociocultural setting in which that use occurs.

### 1.5.2 Chapter 3 Communication Tools in Dialogue

This chapter continues the theoretical background and literature review examined in the previous chapter. In order to consider the notion of a community of learners, it builds on the dialogical construction of cognition introduced in Chapter Two and looks at the dialogical construction of community. It also examines the history of communications and the affordances and constraints of communication tools. The chapter takes an ecological approach in considering how communication tools are

used within a wider cultural context, considering notions of time and space as well as dialogue and argues for an approach to communications that incorporates both temporal and spatial dimensions. Issues of dialogue in teaching and learning are considered as well as the question of how this dialogue can be made apparent through CMC.

Firstly, this chapter presents an historical view of the tools of communication. Orality, literacy and cognition are considered, as are the affordances and constraints of those communication tools. The theories of Walter Ong, Marshal McLuhan and Harold Innis are introduced along with a discussion of the repercussions of their theories for CMC. A discussion of the pitfalls of technological determinism is included and the chapter demonstrates how such dangers can be avoided through combining theories that have been criticised as technologically determinist with a sociocultural approach to the study of communication tools. A discussion of how CMC fits into the orality/literacy binary is considered. The affordances and constraints of CMC compared to traditional teaching and learning approaches are examined.

Secondly, the chapter considers the construction of virtual communities of learners through CMC as a teaching and learning tool and looks at how dialogue operates in the construction of those communities. It will argue that media used in communication processes may obscure the dialogical nature of cognition.

Finally, the conclusion to the third chapter argues that while previous research has shown that the use of various communication tools makes apparent or suppresses the dialogical nature of communication and cognition, CMC reveals a potential to provide a synthesis of the oral and written and to reveal the dialogical nature of learning.

### 1.5.3 Chapter 4 Methodology

Chapter Four constitutes the first of two methodological chapters. This particular chapter is the more theoretical of the two. It provides the wider view of the methodology employed, presenting information on the case study method and the

sociocultural approach to the studies. It considers methodological problems and underscores the chapter following it.

The chapter will begin by introducing the concept of qualitative research. It compares the nature of qualitative and quantitative research. Following on from the survey of qualitative research methods, an ethnographical approach to research is presented along with details of the case study method employed throughout this thesis.

The chapter continues by providing an overview of research tools including Systemic Functional Grammar (SFG). SFG has been successfully employed by a variety of researchers interested in how language works within a particular discursive practice.

Following on from this a survey of sociocultural discourse research methods is presented and the concepts of context, common ground and cohesive ties are introduced. The role of dialogue within a sociocultural research approach is made explicit, which leads into a discussion of dialogical genres. Various approaches to dialogue are considered.

Finally, Chapter Four concludes by arguing that, whilst the approach to this research is primarily qualitative, some quantitative research is needed to support the qualitative analysis of the thesis.

#### 1.5.4 Chapter 5 Design of Studies

This is the second of the methodological chapters and sets out the way in which the studies are pursued. Presenting information about the study and the technology used in both the CMC and the analysis, it provides a framework around which the data is analysed. The chapter also presents information on planned and unplanned language. It provides details of the questionnaires and interviews that were used in the analysis and discusses the ethical issues involved.

The chapter begins by rehearsing the research questions. It then sets out the background to the studies and the Conferencing Environment to Support Academic

Writing (CESAW) course that has provided the data for the studies. The FirstClass @conferencing system, on which the CESAW course is conducted, is explained.

This chapter then shows how the methodology outlined in the previous chapter is employed in the examination of the data.

The concept of planned/unplanned language is introduced and the data collection methods are presented, followed by the ethical considerations of the study.

Finally, the chapter concludes by summarising the methodology and explains why this particular methodology was chosen for this study.

#### 1.5.5 Chapter 6 Case Study

This case study is divided into two parts. The first is a close examination of the CESAW learning group with the most prolific postings to the online learning environment. This chapter shows how the sociocultural methodology introduced in Chapter Five was used. It also examines the research questions in the light of the data being analysed.

In order to do this the chapter begins by describing the data collected. It then presents discourse and textual analysis. The study examines how participants establish common ground and then examines their writing, paying attention to the use of formal and informal writing. The patterns of dialogue are analysed.

Following this the chapter looks at the notion of academic writing and how that notion relates to the groups studied.

Results from questionnaires and interviews administered to participants are presented, followed by a consideration of the participant observation of the course.

In conclusion the findings presented are discussed, followed by a consideration of the problems encountered in this study.

### 1.5.6 Chapter 7 Study Two

The second study expands the survey to consider the wider range of groups within the course under examination. It draws upon the wider group of participants to examine the dialogical communities established and the efficacy of CMC as a collaborative teaching and learning tool. In a similar way to the previous chapter, this one examines the research questions in the light of the data being analysed. In common with Chapter Six it looks at a textual analysis, considering how participants establish common ground.

Some discourse analysis using Systemic Functional Grammar (SFG) follows and then the results of the questionnaires and interviews administered to this group are considered.

Finally, a discussion of the findings of this study is presented in the light of the research questions.

### 1.5.7 Chapter 8 Conclusion

This final chapter discusses the findings of the entire study. It revisits the literature reviews and places the work in the wider field set out within the parameters explored in previous chapters. It provides a critique of the study as a whole and identifies the scope for future research in the field. The main contributions of the work are presented. This chapter also considers the implications of the research and the relevance of the analysis is supported. In addition, the limitations of the study are also considered. Recommendations for further research in the field are introduced and the chapter concludes with a general summary of the work presented.

## **2. Teaching and Learning.**

### **2.1 Introduction**

The research problem as previously set out in detail concerns dialogue and induction into communities of discursive practice using CMC. In the light of those questions the nature of teaching and learning, dialogue, community, discourse and CMC will be considered through the literature reviews. The first presented in this chapter concerns teaching and learning, dialogue, community and discourse. The following chapter will examine the nature of CMC.

Pedagogical theory has embraced a range of views from Behaviourism to Constructivism. Social Constructivism has built upon the advances gained from Constructivism. It has been recognised that collaborative learning can prove to be an effective tool for teaching and learning (Lave & Wenger, 1991) (Crook, 1994) (Dawes, 1997) (Mercer, 1995) (Mercer et al., 1999). The problem has been how this can be encouraged in students who experience time and space constraints whether through distance, demands on time or disability, and, therefore, cannot fully engage in the practice of collaborative learning. CMC offers the opportunity to overcome this hurdle.

This chapter sets out a review of teaching and learning theory in terms of its application to the practice of collaborative learning.

The literature reviews in this and the following chapter, draw from an eclectic range of disciplines including linguistics, psychology, anthropology, media studies and cultural studies. My approach follows the view of Gregory Bateson (1988), who argued that we gain a more holistic view of an issue if we hear it described in more than one theoretical discourse (Bateson, 1988). The review will investigate four areas, theoretical pedagogy, theoretical technology, applied pedagogy, and applied technology. The sections on pedagogy are dealt with in this chapter while the sections on technology are set out in Chapter Three.





The chapter is set out as

## 2.1 Introduction

## 2.2 Teaching and Learning

### 2.2.1 Constructivism

### 2.2.2 Social Constructivism

### 2.2.3 Communities of Discursive Practice

## 2.3 Discourse

### 2.3.1 The Formal Linguistic Approach

### 2.3.2 The Empirical Social Approach

### 2.3.3 The Critical Approach

## 2.4 Background to Dialogue

### 2.4.1 Dialogue

### 2.4.2 Social Modes of Talk

## 2.5 Conclusion

Whilst the headings in this and subsequent chapters are presented as sections they should not be seen as exclusive. There is a great deal of interaction between different sections and they are presented as a guide to the area of discussion. For example, the teaching and learning considerations of cognition cannot be neatly categorised under the teaching and learning section so they are also considered in the discussion of Vygotsky in the section on sociocultural discourse. The reader will find many other examples of the links and a degree of overlap between different sections.

## **2.2 Teaching and Learning**

It is important to recognise that "no one method of teaching reading has ever been found to succeed (...)." (Lewin, 1997). Any pedagogical practice must take into account the various needs of different learners, the sociocultural aspects of the learning environment, the abilities of the students and the availability of technology.

Lave and Wenger (1991) have argued that learning involves an induction into communities of discourse. Induction occurs through interaction with peers and mentors. 'Situation Learning' occurs when students engage in activities situated in

social practice. It is through this process that information is transmitted via co-participation between experts and learners. The development of skills in practice with the teacher allows the learner to engage actively in a process described as 'Legitimate Peripheral Participation'. This moves the learner towards full participation. It is a process of 'learning by doing' that is achieved through 'Situated Learning' and occurs within the context of social practice.

### 2.2.1 Constructivism

Piaget (1977) developed a notion of Constructivism, where learning is an individual process and cognition is developed through the progress of one's own learning process. Knowledge, according to Constructivists, is not passively obtained, but is gained through the student's active participation in learning. Cognition helps the learner make sense of his or her own environment and helps to make behaviour more practicable within the learner's lived experience. There are two major strands of Constructivism, Cognitive Constructivism and Social Constructivism. Whilst they may differ in their approach, Jonassen (1994) proposed that they have eight characteristics in common.

1. Constructivist learning environments provide multiple representations of reality.
2. Multiple representations avoid oversimplification and represent the complexity of the real world.
3. Constructivist learning environments emphasize knowledge construction instead of knowledge reproduction.
4. Constructivist learning environments emphasize authentic tasks in a meaningful context rather than abstract instruction out of context.
5. Constructivist learning environments provide learning environments such as real-world settings or case-based learning instead of predetermined sequences of instruction.
6. Constructivist learning environments encourage thoughtful reflection on experience.

7. Constructivist learning environments "enable context- and content- dependent knowledge construction."
8. Constructivist learning environments support "collaborative construction of knowledge through social negotiation, not competition among learners for recognition." (Jonassen, 1994)

### 2.2.2 Social Constructivism

Both Cognitive and Social Constructivists would support Jonassen's characteristics. Social Constructivism however, considers learning to be a social process. Learning, according to Social Constructivism, occurs when learning is negotiated through public discussion. Social Constructivism sees cognition as occurring within sociocultural settings and through interaction employing language tools.

That interaction may be defined as collaborative work, a style to which CMC is particularly suited. In 1995 Edgar wrote,

The development of educational pedagogy has interesting parallels with the development of personal computer technology. Centralized and autocratic, mainframe technology (and, in the public schools, similarly architected Instructional Learning Systems) distributed a CAI (computer-assisted instruction) approach to education which was strictly content-based and driven by behavioral objectives. With the onslaught of personal computers came the popularity of constructivist approaches to educational technology, where open-ended environments provided individual students with tools to experiment and build their own learning constructs. In the last few years, as the internet and World Wide Web have matured; the social aspects of learning as described by Vygotsky have become useful for those looking to design educational projects involving a distributed but intercommunicating audience. (Edgar, 1995)

### Vygotsky and Cognition

The founding father of Social Constructivism was the Russian theorist Lev Vygotsky. He argues that cognition occurs on the 'intermental' plane and then transfers to the 'intramental' plane (Wertsch, 1998). Intermental refers to external, while intramental is internalised cognition. Learning and cognition then occurs as a sociocultural rather than individual process. It has been shown (Wertsch, 1990) how cultural tools, such as specific registers in language use, may be privileged in certain situations.

Bakhtin has shown that it is important, not only to know how to use cultural tools but also how to use such tools appropriately. According to Bakhtin, "linguistic forms and meanings 'belong' to speakers" (Wertsch, 1990). The correct use of such tools can occur in a co-operative way or it can lead to a conflict over the 'ownership' of forms and meanings. One often-recurring example of resistance within academic discursive practices is the statement from certain students that their thesis is written in a "non-academic" language that can be easily understood by those outside academia and the academic institutions. Although the writer would be familiar with the appropriate register for the thesis, such statements exhibit a choice to resist using the academic voice.

Vygotsky also argues that understanding is mediated by using tools. These may take the form of language or signs. This mediation, along with the tools involved, result in socio-historical processes of change. Cognition occurs firstly in the intermental plane (through external stimulus), then moves to the intramental plane (internal cognition). While Vygotsky's work was concerned with child development, but the theories that he developed are highly relevant to this discussion.

Any function in the child's cultural development appears twice or on two planes ... It appears first between people as an intermental category, and then within the child as an intramental category. This is equally true of voluntary attention, logical memory, the formation of concepts, and the development of will. (Vygotsky, 1962 pp.197-8)

According to Vygotsky, individual cognition (intramental functioning) results from social (intermental) experiences (Wertsch 1998). The discourse of that interaction, the

language and the way knowledge is shaped and valued, all play a part in the process of what is learned or communicated. That encounter may be internalised (become intramental) and become part of the participant's own internal cognition. Therefore, students draw from their experiences of the discourses available to them as a result of their internalisation of previous encounters (Ivanic 1997 p.51).

Decontextualisation occurs where words or terms are abstracted from the discourse or text in which they were embedded and hence become objects of reflection. This leads to a mastery of abstract forms of reasoning (Wertsch, 1990). The decontextualisation of signs provides a higher level of cognition. This comes about through the process of internalisation. Internalisation occurs when intermental cognition moves to the intramental plane. While Vygotsky was primarily interested in how this process works in children's development, the process can be seen to apply to other areas of development and cognition. Vygotsky argues that decontextualisation leads to the occurrence of a different level of mediation. This results in different cognition, which Vygotsky sees as a higher level of cognition. (Vygotsky, 1962; Vygotsky, 1978).

This approach is relevant to this study in that it sets out the basis for understanding the dialogical nature of cognition and the dialogical nature of induction into a community of discursive practice.

Vygotsky (1962, 1978) has shown how cognition occurs on the intramental plane, a concept extended by Volosinov (1973, 1976) to the concept of the dialogical construction of knowledge. This thesis argues that the constraints of print media have obscured the dialogical underpinnings of academic discursive practices. This can be seen in the fact that journal articles, books and other academic work have not shown the dialogical construction inherent in the work. CMC, however, leaves behind a trail that shows the dialogical construction of discursive practice.

## **The Zone of Proximal Development**

Vygotsky argues for a Zone of Proximal development (ZPD) in which a student is assisted by extending their learning through interaction with a more advanced tutor.

His concept is shown in the following quote. In this particular instance, we could substitute learner for child and mentor for adult.

For each subject of instruction, there is a period when its influence is most fruitful because the child is most receptive to it. It has been called the sensitive period by Montessori and other educators. The term is used also in biology, for the periods in ontogenetic development when the organism is particularly responsive to influences of certain kinds. During that period an influence that has little effect earlier or later may radically affect the course of development. But the existence of an optimal time for instruction in a given subject cannot be explained in purely biological terms, at least not for such complex processes as written speech. Our investigation demonstrated the social and cultural nature of the development of the higher functions during these periods, i.e., its dependence on cooperation with adults and on instruction." (Vygotsky, 1962), p. 186)

Wood, Bruner and Ross (1976) introduced the concept of "scaffolding" for this type of learning with a more experienced tutor in the ZPD (Wood, Bruner, & Ross, 1976).

(Scaffolding) refers to the steps taken to reduce the degrees of freedom in carrying out some task so that the child can concentrate on the difficult skill she is in the process of acquiring. (Bruner 1978, (p. 19)

Scaffolding requires both the mentor and the learner to be actively involved for the learning to be effective.

### 2.2.3 Communities of Discursive Practice

The concept of Communities of Discursive Practice draws from both Constructivist and Social Constructivist models of development. As the participant is involved in Situated Learning and shares their learning through negotiated meanings, they move from the level of a beginner to that of an expert within the Community of Practice.

Induction into an academic community of practice will occur through the process of learning academic argument, which in turn involves written argument. Papers, theses, books and journals have been the traditional methods of disseminating academic argument and have served as the primary method used to share academic knowledge for discussion in a public forum. It is through academic writing that argument and discussion within academic Communities of Practice has occurred.

The development of written argument requires the development of critical reading skills. According to Brown (1980) such development will involve:

1. clarifying the purposes of reading, that is, understanding the task demands, both explicit and implicit;
2. identifying the aspects of a message that are important;
3. allocating attention so that concentration can be focused on the major content area rather than trivia;
4. monitoring ongoing activities to determine whether comprehension is occurring;
5. engaging in review and self-interrogation to determine whether goals are being achieved;
6. taking corrective action when failures in comprehension are detected; and
7. recovering from disruptions and distractions - and many more deliberate, planful activities that render reading an efficient information gathering activity. (Brown 1980, p. 456)

Comprehension therefore involves a range of skills that develop through the process of written argument.

Wray and Lewis (1997) argue for the importance of the reader in literacy. Drawing on the work of Freebody and Luke (1990), they claim that a successful reader needs to develop the following roles:

- a) a code breaker (How can I crack this? What does it say?)
- b) a text participant (How can I understand this? What does it mean?)
- c) a text user (How can I use this? What can I do with it?)

d) a text analyst (How can I respond to this? What does this do to me?) (Wray and Lewis 1997, p. 104)

Wray and Lewis (1997) then move on to describe the process of critical literacy by way of the following questions:

- Who produced this text?
- What is its purpose?
- What choices were made during its production?
- Why were the choices made? (Wray and Lewis 1997, p. 105)

Such critical literacy needs to be fostered through CMC. The pedagogical aim of CMC should be to develop such critical skills.

Scardamalia and Bereiter claim that educators need to move away from a view of students as “clients” and move towards a model which views them as “members” or “workers” (Scardamalia & Bereiter, 1999). They point out that this is not a new concept but one that has been around at least since Dewey. It has, however, recently started to take shape through new experimental designs. They term this “collaborative knowledge building (Bereiter & Scardamalia, 1992), (Scardamalia, Bereiter, & Lamon, 1994), (Scardamalia & Bereiter, 1999), arguing that the production of new knowledge requires a team effort. Individual and collective learning are both a by-product and a contributor to those ends (Bereiter & Scardamalia, 1996), (Scardamalia & Bereiter, 1999). This particular viewpoint then assumes that it is a role for education to facilitate an induction into a community of discursive practice. This induction requires dialogue and a study of how CMC inducts participants into discursive practices to show how effectively CMC can promote dialogue.

### **2.3 Discourse**

As there is no unified system of discourse theory, it is prudent to approach any use of the term with due care and attention. While this thesis draws upon the sociocultural



concept of discourse, this section will provide an outline of the various theories of discourse that currently exist and discuss the traditions behind them.

One point on which all traditions of discourse theory agree is that 'meaning' is both fluid and contextually based. The term takes into account the wider implications of communicative styles, namely the social relations that prevail within a language structure. This very language structure is the product of social, historical and institutional constructs adapted for specific purposes. Therefore, any meaning of discourse takes into account the idea of language as a fluid dynamic.

However, while discourse is a social process, we should not assume that all social processes are discourses. The word 'discourse' serves as both a noun and a verb. Discourses can be seen as those social processes that are used for communicative action. Therefore, a definition of any concept of discourse becomes highly dependent on the context within which it is used.

Examples of various discursive practices employed in an academic setting include academic discourse, social discourse and business discourse. Each of these is employed according to the communicative needs of the author and the audience for whom the communicative act is intended.

The correct use of a particular discourse may be determined by the dictates of a profession or discipline. A member is usually inducted into a discourse community through a process of apprenticeship/tutorship as discussed by Vygotsky and Scardamalia and Bereiter.

Alec McHoul ( 1993) has identified three main approaches to the study of discourse. Each approach has its own concept of the meaning of 'discourse theory'.

- The formal linguistic approach
- The empirical sociological approach
- The critical approach.

Whilst these categories provide useful methods of analysis, the divisions are not always as cut and dry as they may seem. There is often an overlap in the approach taken by different contributors to the study of discourse.

### 2.3.1 The Formal Linguistic Approach

Harris (1952) gave discourse a strictly linguistic meaning. According to him, discourse refers to connected speech or writing at a level greater than the sentence. Rather than helping to understand the structure of the singular sentence, this methodology of linguistics concentrated on the understanding of how connections occur between sentences. Mitchell (1957) went on to expand on Harris' work, which had been based on invented data, by using real talk and texts.

Van Dijk (1972) fostered an approach to discourse analysis that originated in textual linguistics. Later, in 1985, he noted that his understanding of discourse as language use drew from the distinction between grammar and rhetoric. Whilst grammar is concerned with the correct use of a language, rhetoric is the application of language to everyday use. A similar distinction can be found in Saussure's concept of "langue" and "parole" (Saussure, 1960). Langue refers to a language system common to a community of discourse while parole refers to the use of language in particular situations. Parole is the concrete realisation of the langue.

### 2.3.2 The Empirical Sociological Approach

Garfinkel (1967) pioneered an approach known as "Ethnomethodology". This approach provides a critique of the structuralist approach, choosing to focus on how the ethnos or social community relies upon a relatively stable body of general methods for the accomplishment of social facts. Following on from this approach, Sacks, Schlegoff and Jefferson (1974) examined turn taking and correction in talk. Their methodology, known as Conversational Analysis, relies upon transcriptions of situated conversation. This analyses a body of data instead of taking a theoretical approach to communication. For a detailed account of topics analysed in Conversational Analysis, see Heritage (1984).

Sinclair and Coulthard (1975) and the Birmingham School developed a methodology for studying classroom interaction that they termed “Discourse Analysis”. This theory divides discourse into five categories or “ranks”: interaction, transaction, exchange, move and act. Each rank is made up of parts of that rank, as stipulated below. According to this model of discourse analysis, exchanges comprise two types:

- Organisational Exchanges and
- Conversational Exchanges.

These two types can be further broken down as follows:

- Organisational Exchanges: Boundary Exchanges (framing moves) and Structuring Exchanges (made up of opening moves)
- Conversational Exchanges: Elicit Exchanges, Inform Exchanges, Direct Exchanges and Clarifying and Repeat Exchanges that are initiated by an eliciting move.

Sinclair and Coulthard have analysed classroom interaction in terms of “Interaction, Feedback and Response” (IRF). David Graddol (1989) has argued that IRF is a controlling mechanism within teaching discourse. In a traditional teaching model, the teacher can control turn taking and discourse.

Wells (1996) was critical of such teaching methods as IRF. He argued that such methods did not promote higher cognitive skills and suggested an 'extend' response that required exemplification, justification and explanation. CMC provides a framework for such responses requiring participants to exemplify, justify and explain their work.

### 2.3.3 The Critical Approach

Foucault (Foucault, 1972) saw discourse as something more than language. He saw it as a controlled and controlling process comprising ritual, power and privilege embedded in institutional practices. Any discourse is not the whole truth on a subject, but that that can be said to be constrained by assumptions and according to the limits of a community of discursive practice. Foucault's view is that education is the social appropriation of discourse. All discourse is framed within a perspective and Foucault

saw discourse as a dialogue between author and receiver. As a text is silent until read and then is given a voice by the reader, so any discourse requires two voices and can never be monological. Discourses of control are themselves part of a preceding discourse.

The different discourse theories and paradigms may be seen as exclusive, yet through a sociocultural lens, these discursive approaches can be brought together. The sociocultural approach recognises that discourse occurs neither in the monological vacuum of the single voice or in the second voice of the reader alone. Instead, it employs the third voice of discursive practice and takes into account the fact that no discursive practice occurs outside social processes. Wertsch (1998 pp. 109 - 110), argued for two notions of "social interaction" and "intermental". In order to examine this we need to turn to the sociocultural approach that builds upon the work of Russian theorists Lev Vygotsky and Mikhail Bakhtin. A theoretical approach of this kind looks to the development of cognition through interaction with others, leads to an examination of the dialogical construction of knowledge.

## **2.4 Background to Dialogue**

### **2.4.1 Dialogue**

Habermas is searching for a universal theory of communication in what he terms "universal pragmatics" (Habermas, 1979). He has developed three pragmatic rules,

1. External - sets the communication in relation to external reality
2. Internal - relates to the speaker's internal reality.
3. Normative - concerns the speaker's social lifeworld.

It is in the interaction between those three situations that dialogue occurs.

The speaker's internal reality may be challenged through the dialogical process that can lead to a re-narration of the self as intermental learning impacts on the intermental.

As Mansfield has argued;

The value in western European culture for belief acquisition to take place without the mark of the origin is when belief is acquired in the field of reason and in an ideal speech situation. Self –reflection is a way to remove any deception which may have taken place during the acquisition of beliefs. Thus, a belief acquired during re-narration of the self will have the value of a true belief and will go towards the formation of personal values and self-identity. (Mansfield, 2000)

Dialogue leads to a new formation of self identity. Therefore, if dialogue breaks down due to a lack of common ground, no new identity formation will occur. Dialogue occurs not only between the speakers, but also between any observer(s). Mansfield (2000) argues that the awareness of being observed is dialogic. The interaction between users and technology - and its interface (see for instance Turkle, 1997) - is also a part of any dialogical process. So participants in a dialogue can be seen to be the speakers, the observer(s), the technology and the social setting in which it occurs. It is important to remember that dialogue can also occur between the observer and those being observed. The awareness of observation is itself dialogic. The gaze of the “other” represents another text requiring a response. The response may be an alteration in behaviour and in the text authored by the individual (Foucault, 1979).

Dialogism accepts that the researcher is part of the dialogue and process and, as such, must take responsibility for the process.

Implicit in all the Bakhtin group's writings on the dialogic interdependence of speaker and addressee there is, moreover, the recognition that this is a dynamic inscribed by power. (Pearce 1994, p.4).

Whilst Pearce argues that power is most evident in intonation and seeks out intonation in the speech, she does suggest that tone of voice can be seen in written texts, too.

The representation of dialogics as an epistemology is a result ... of the hundreds of readers and critics from a broad spectrum of

disciplines within the human and social sciences who have perceived in this relational model of text/self/world a means of tempering the apocalypticism of postmodernist discourse. (Pearce 1994, p.6).

In dialogism "all meaning depends on the presence of a reciprocating other: a contract that ... is expressed through the concept of answerability." (Pearce 1994, p.7).

Dialogue, by its nature, is opposed to a monological imparting of communication. All expression relates to other expressions. Whether those expressions are spoken, written or other sign forms, they are all in dialogical relation to other voices. These voices may derive from a variety of sources, internal and external. As Bakhtin says, each utterance;

... refutes, affirms, supplements and relies on the others, presupposes them to be known and somehow takes them into account ... from the very beginning, the utterance is constructed while taking into account possible responsive reactions, for whose sake, in essence, it is actually created (Bakhtin 1986, pp. 91-94).

Bakhtin (1986, p. 95) referred to this direction of utterance to other voices as "addressivity".

In order to create a self-sustaining online learning culture, Crook (1994) argues the need for shared understandings and ongoing dialogue amongst participants. Crook refers to this as 'longitudinal continuity'. Similarly, Bereiter (1994) saw this as a "progressive discourse". Crook sees the longitudinal continuity of common knowledge as residing within the talk that constructs that which participants hold in common as well as within the instruction. This shared cognition occurs through the appropriation of understandings.

Dialogue may take several forms. Nancy Fraser (1989), for example, has made a distinction between two models of dialogue:

- monological and

- polylogical.

Monological discourse, which she describes as "individualistic, elitist and antisocial" (Fraser 1989, p. 103), is dialogue "in which interlocutors share a sense of what counts as a problem or question, as a well-formed or serious hypothesis, and as a good reason or argument" (Fraser, 1989) p. 102.). Polylogical dialogue "involves a plurality of differentiable, if not incommensurable, voices, and it consists in an exchange among them that is lively if somewhat disorderly" (Fraser, 1989) p. 103).

These two models correspond with the models that Burbules (1993) has called *convergent* and *divergent* dialogue. Convergent dialogue "assumes that the various positions of the interlocutors are, at least in principle, resolvable into a consensus around a correct answer" (Burbules, 1993) p. 110. Divergent dialogue means that "plural meanings, complex and ambiguous connotations, and the myriad associations speakers have for the terms they use, often put their utterances at cross-purposes, multiplying possible interpretations rather than narrowing them toward a single correct one" (Burbules, 1993) p. 111.

Burbules further identifies two other distinctions in types of dialogue that depend upon the different attitudes on the part of the actor. These take on either an *inclusive* or a *critical* orientation. The inclusive attitude grants "at least a provisional plausibility to what one's partner says" (Burbules, 1993 p. 111) whilst the critical attitude "is more skeptical, questioning" (Burbules, 1993 p. 111). This then leads him to identify four pairs of combinations for these classifications;

- Inclusive -divergent      Dialogue as conversation
- Inclusive-convergent      Dialogue as inquiry
- Critical-divergent      Dialogue as debate
- Critical convergent      Dialogue as instruction

(Burbules, 1993 p. 112)

These groupings are then defined as;

- Dialogue as conversation.

This is co-operative dialogue and aims towards reaching a mutual understanding where the "final aim is not a correct and final answer, but a heightened sense of

sensitivity and understanding of other persons and through understanding them, newly understanding ourselves" (Burbules, 1993) p. 116).

- Dialogue as inquiry.

This dialogue aims to resolve a particular question.

- Dialogue as debate.

This form of dialogue is questioning and seeks no resolution.

- Dialogue as instruction.

The Socratic dialogue which aims to move an exchange towards a particular conclusion.

As Burbules (1993) points out, effective dialogue needs ground rules. Wegerif, Mercer and Dawes (1998) have identified the following rules for effective talk in their work with primary school children:

All relevant information is shared;

The group seeks to reach agreement;

The group takes responsibility for decisions;

Reasons are expected;

Challenges are accepted;

Alternatives are discussed before a decision is taken;

All in the group are encouraged to speak by other group members. (Wegerif, Mercer, & Dawes, 1998)

#### 2.4.2 Social Modes of Talk

When examining dialogue and intermental learning in primary school classrooms, Mercer (1995) identified three 'Social Modes of Thinking':

- Disputational talk
- Cumulative talk
- Exploratory talk

Disputational talk is categorised by disagreement and individual decision making.

When engaging in cumulative talk, speakers build positively but uncritically on the comments of others.



Exploratory talk means that participants engage critically, but constructively, with others. Knowledge is made more publicly accountable and reasoning is more visible in the talk. Progress emerges from the eventual joint agreement reached (Mercer, 1995).

Rupert Wegerif (Wegerif & Scrimshaw, 1997) has provided examples of these types of talk collected in primary school classrooms. These are attached in Appendix 2.

From those examples, it can be seen that exploratory talk, which relates to Burbules dialogue as conversation, is the most complex mode of thinking involved in these exchanges. Mercer argues that exploratory talk is the most productive for the purpose of teaching and learning and develops collaborative skills and reasoning (Mercer, 1995) (Wegerif et al., 1998) (Mercer et al., 1999).

The examples cited above were collected in primary schools and in face to face communication situations so the question arises; can these modes of thinking apply to adult learners in an asynchronous situation?

In addition to looking at these modes of talk amongst adult students in an asynchronous environment, the study will also examine collaborative use of CMC in teaching and learning. As already noted, collaboration in students' talk is described as "exploratory talk" (Mercer et al., 1999) (Barnes & Todd, 1977). Previous research has shown that exploratory talk is an effective pedagogical tool.

## **2.5 Conclusion**

This chapter has presented a review of the issues surrounding collaborative learning. In order to understand how people learn using the tool of CMC we first need to understand how people learn, This chapter has presented theories of how students participate in the teaching and learning process and reaches the conclusion that learning is not an isolated process but one that occurs in a participatory dialogical setting.

The dialogical educational theory of the Zone of Proximal Development was presented. Through the process of scaffolding (e.g. Wood et al. 1976) a learner may develop beyond the level of attainment in learning that may be otherwise achieved. CMC may provide an opportunity for such development.

Following on from this the concept of communities of discursive practice has been examined. The community concept reinforces the interactive and dialogical processes involved in education.

The process of communication and cognition can be seen as a process that is mediated through the use of tools. These tools include language and dialogue. The "correct" use of those tools is taught through education and official discourse. There are, however, a number of discourses available to the user according to their own sociocultural setting. These discourses will affect the use of the tools. This then led to a problematisation of the overused word "discourse" and a consideration of some of the meanings of the term. It has been argued that discursive practice occur as a part of social processes.

This conclusion then lead to a further examination of the processes of social action that occur as dialogue. The conclusion was that, as we learn, communicate and interact, this occurs through dialogue and that teaching and learning is an interactive dialogical process rather than a singular monological process.

Returning to the nature of dialogue, theoretical aspects of dialogue were considered. Several models of dialogue have been discussed; leading to the conclusion that the nature of true dialogue in the teaching and learning process is dialogue that seeks to advance discussion and understanding in a collaborative manner. Social modes of talk were presented as examples of different dialogical styles within the educational process. Exploratory talk where collaborative communication occurs when participants engage critically but constructively with others is shown to be the ideal within a collaborative learning model of scholarship.

Having looked at teaching and learning, the following chapter will go on to examine issues concerning the tools of technology, in particular CMC, and how it can be used as a dialogical tool. In the conclusion of Chapter Three the implications of both this and the survey in the following chapter will be considered in more detail.

## **Chapter Three. Dialogue and Monologue**

### **3.1 Introduction**

Having set out a model of dialogism in the previous chapter, this chapter will examine the tension between dialogic and monologic models of communication. It will examine the affordances and constraints of communication tools and the bias inherent in those tools.

It has been argued that oral communication leads to a dialogic model of cognition and that print obscures the dialogic nature of cognition. This chapter will argue that CMC has the potential to synthesise both monologic and dialogic models of communication. While it is recognised that all cognition is dialogically constructed, the print medium obscures the dialogic in that it appears as the product of an isolated writer (or group of writers) and is generally read by an isolated reader. Both readers and writers are isolated from each other during the process of communication whilst CMC has the potential to overcome spatial and temporal constraints to allow and promote dialogue.

To recap briefly, a dialogic model of cognition, drawing from Bakhtin and Volosinov sees meaning as a social dynamic where comprehension comes from interaction. This interaction may be seen as an experience that occurs within the social and cultural milieu of the learner. Schutz & Luckmann, (1974) wrote about 'zones of experience' that extend from processed events. The relevance of this to new media, such as CMC, is that new media creates a new zone of experience. Whilst the new media is entered into with previous experience, the medium creates its own experience as different potentials are explored. Thus, cognition alters through the affordances of the new zone of experience.

While accepting that tools are part of human communication, it is important to widen the discussion to address issues surrounding technological determinism and theories about the constraints and affordances of the media of communication. The chapter will examine debates about the role of technology in pedagogy and look at technological determinism whilst considering the use of ICT in pedagogy.

The chapter is set out as:

### 3.2 Orality, Literacy and Cognition

#### 3.2.1 Secondary Orality

#### 3.2.2 Time and Space

#### 3.2.3 Technological Determinism

### 3.3 Dialogic Community

#### 3.3.1 Cyberspace and Virtual Communities

### 3.4 Conclusion

## **3.2 Orality, Literacy and Cognition**

The emergence of writing signalled the birth of literacy and set into motion subsequent changes in experience that led to changes in cognition. It can be argued that, in a similar vein, CMC marks the beginning of a new form of literacy, which leads to new experiences and new changes in cognition. This new form of literacy is examined in this chapter.

In *The Phaedrus* Socrates argued that the new technology of writing would provoke constraints to cognition and lead to a loss of "true wisdom".

If men learn this writing it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on what is written, calling things to remembrance no longer from within themselves but by means of external marks; what you have discovered is a recipe not for memory but for reminder. And it is not true wisdom you offer your disciples, but only its semblance....  
(Hackworth 1972 p. 157)

Socrates argued that writing would lead to forgetfulness and that literacy imparted a semblance of truth, in that the reader appeared to be omniscient and yet know nothing. It gives an impression of wisdom that is not based on reality. Writing, according to Socrates, is less reliable than knowledge and recollection, being "only a kind of ghost" of the "living animate discourse of a man who really knows".

The process of writing and later print, combined with the rise in the number of people with the ability to read has led to a loss of oral discourse. This, in turn, has brought about an emphasis on the individual, rather than the community.

Fears have also been expressed that new ICT tools will render the print medium obsolete. Sven Birkerts (1996) argues that CMC and online publications signal the end of the book trade. He argues that electronic publishing renders the economics of book publishing no longer viable, resulting in a decline of scholarly discourse publications (Birkerts, 1996). While much of Birkerts' argument is compelling, many of the fears he expresses echo the fears expressed by Socrates about the new technology of writing experienced in Ancient Greece during the transition from oral to literate culture. The news of the death of the printed page is premature, as recent events in e-publishing have verified.

When book publishing company Random House established its AtRandom e-book division a year ago a Random House executive said: "This is the brave new world we want to see. No printing, no paper and binding, no need for a sales conference or printed catalog -- we don't know the size of the market, but it could be potentially very profitable for us." A year later, the company has determined the size of the market -- and is closing down the AtRandom imprint. A spokesman for the company awarded the project a grade of A-for-effort, saying: "I think we did a great job putting together a program that would have made good e-books available had been people been (sic) buying e-books in any real numbers." (New York Times, Nov 2001)

In this instance new tools have not made old tools obsolete. The new tool extends the 'zone of reference' for the user and builds upon their experience and use of other tools. The addition of the new experience aids the formation of a new cognition.

Fears of electronic communications replacing the print medium were even articulated as far back as 1894 when Octave Uzanne forecast that sound recording technology

would mean the death of the printed book. "The printed book is about to disappear. After us the last of books, gentlemen." (Uzanne, 1894. p. 230)

In a perceptive article in *Scribner's Magazine Illustrated* Uzanne forecast the development of radio and television broadcasting and the Walkman player. However, his prediction that recorded books would replace the printed book proved incorrect. He did understand that new technologies would impact upon cognition.

I shall not undertake to enter into the technical details of the methods of operating these new interpreters of human thought, these multipliers of human speech; but rest assured that books will be forsaken by all the dwellers upon this globe, and printing will absolutely pass out of use except for the use it may still be able to render to commerce and private relations; and even there the writing machine, by that time fully developed, will probably suffice for all needs. (Uzanne, 1894. p. 228)

While these followers of Socrates feared the impact of writing, Heim celebrates the isolation in thought that has arisen through print-based media but fears the lack of individual thought that comes through the collaborative use of new technology. He argues, that technology-based rhetoric ruins the privacy of the individual mind (Heim, 1998).

So, on the one hand, print is seen as a potentially destructive force in that it seems to promote isolation. On the other hand, that individualism is celebrated. When considering the individualistic bias of print, Kauffer and Carley (1993) argue that print has facilitated distance communication and the development of geographically separated knowledge communities (Kauffer & Carley, 1993). These communities are able to explore ideas without the need for face-to-face interaction. However, Kauffer and Carley do acknowledge that such virtual communities consist of isolated members.

### 3.2.1 Secondary Orality

The understanding of Ong (1982) is that electronic media transforms and technologises the word, a process begun by writing and printing. He suggests that this process has led to a post-literate culture, which he calls "secondary orality". Noting that much of electronic media displayed the characteristics of orality, Ong coined the phrase "secondary orality" to describe the move away from a print biased culture.

With telephone, radio, television and various kinds of sound tape, electronic technology has brought us into the age of 'secondary orality'. This new orality has striking resemblances to the old in its participatory mystique, its fostering of a communal sense, its concentration on the present moment, and even its use of formulas.  
(Ong, 1982 p. 136)

However, this new secondary orality can never move to a primary (pre-literate) orality, but instead offers mediation at a new level as it builds upon the experience of both oral and literate cultures.

Following Ong's (1982) argument that electronic media have the potential to promote secondary orality, I would argue that the internet demonstrates an ability to counter-balance the influence of spatially biased media, such as print and broadcast media, through dialogue.

Commentators (Yates, 1993; Yates, 1996) (Lea, 2000) have noted that the language of CMC lies between the oral and the written. Simeon Yates provides a corpus-based comparison between spoken, written and CMC texts (Yates, 1993) (Yates, 1996). He concludes that

...the *mode* of CMC, as a communications medium, is neither simply speech-like nor simply written-like. Though CMC bears similarities in its textual aspects (...) to written discourse, it differs greatly in others namely pronoun and modal auxiliary use. Taken together, these similarities and differences make clear the complexity of CMC as a mode of communication. (Yates, 1996 p. 46)



Graddol (1989) argues that CMC is distinct from a mix of oral/literate discourse in that it "reveals certain properties that are not found in either written or spoken language" and, as such, presents a new form of mediation. Furthermore, Graddol points out that the occurrence of 'idle gossip' during computer conferencing serves the purposes otherwise assigned to non-verbal communication in face-to-face communication.

The complexity of CMC means that it has the potential to provide a return to the orality envisioned by Ong, in that CMC has the potential to mediate between the dialogue and the monologue. The case studies presented in this thesis will develop this concept of mediation.

### 3.2.2 Time and Space

Harold Innis (1964) saw the bias of oral culture as temporal. Temporal culture is bound through non-portable communication media, such as stone, paintings on walls and the limitation of distance over which the human voice can travel. Oral culture was dominated by "monopolies of knowledge" that relied on an elite holding knowledge that was hidden from others. Their authority would be drawn from the call of oral history, which they often controlled access to.

Harold Innis sees modernity as a result of a literate culture, being spatially biased, having little sense of the temporal. Temporal bias is a trait of oral cultures. Innis calls for a balance between the two, seeing dialogue as necessary in order to counter the spatial bias of print and electronic media (Innis, 1950; Innis, 1952; Innis, 1964; Innis, 1980; Innis, 1995). Such a balance would allow for the affordances of print (archiving, transport over distance) to be combined with a dialogic approach.

Various commentators have pointed to the consequences of print biased societies. These include the need for dialogue to counter the internalisation of cognition and apparent loss of dialogue through print media.

Innis' attachment to the oral tradition ... had a modern purpose: to demonstrate that the belief that the growth of mechanical communication necessarily expanded freedom and knowledge was both simplistic and misleading. For that to happen there would have to be a parallel and dialectical growth of public sphere, grounded in an oral tradition, where knowledge might be "written in the soul of the learner". (Carey, 1981 p.73)

Innis was not however rejecting the print medium out of hand but calling for a balance, or dialogue, between oral and print based mediums.

Innis is genuinely trying to find a strategy for allowing a multiplicity of levels of discourse to interact with one another while simultaneously presenting an argument which is not "linear" but is rationally defensible. (Theall, 1981 p.228)

Theall takes into account the Innissian perspective on the affordances of different tools with regard to monologic and dialogic approaches. The "passive" receiver is a product of spatial media.

The transmission of film or television to a passive audience is closer to an extension of the written tradition rather than the oral. (Theall, 1981) p. 233

Strate (1994) also investigates the spatial dimension of CMC. He points out that while much time has been spent on the notion of 'cyberspace', not much space has been given to 'cyber time'. The descriptions given, such as 'cyberspace', 'information highway' and 'electronic frontier', all have a spatial bias in their metaphors. Strate makes a plea for the consideration of cyber time. He argues that the notion of time on computers is a digital notion, which infers quicktime (referring to speed, rather than as in the brand name). Drawing from Innis (1951), Strate recognises that an emphasis on speed is consistent with a space-biased society. However, Strate points out that CMC has not only a spatial dimension, but also a temporal dimension. The user's perception

of time can be altered when using CMC. Their sense of time can alter when in cybertime, so that the passing of time can seem to be faster.

This view of changes in cognition through the use of technological tools is by no means modern. In the Eighteenth Century, Jean-Jacques Rousseau wrote that writing changes language and, therefore, the context of communication (Rousseau, 1967). These changes in context have succeeded in making conceptual changes a possibility. According to the sociocultural perspective, as cognition occurs through language, perspective, changes in language and the context of communication will have an impact on the construction of understanding on the part of the learner.

Changing concepts of space have facilitated the construction of different "lifeworlds". Over hundreds of years, the Euclidean concept of physical space changed the Western understanding of cosmology (Wertheim, 1999). According to Wertheim (1999) cyberspace facilitates a return to an earlier cognitive concept of dual space. "Once again we find ourselves with a material realm described by science, and an immaterial realm that operates as a different plane of the real" (Wertheim, 1999 p. 227). Therefore, cyberspace, which is ironically a product of science, represents a move away from modernism and a return to a pre-modern construct of reality, a dialogic reality. This is a move towards Innis' call for balance between temporal and spatial communications and a balance between the individual and the social or monologue and dialogue.

### 3.2.3 Technological Determinism

Adopting an approach that looks at the technological tools of communication has met with criticism by some as being "technologically deterministic". However, as Ruth Finnegan points out;

All communication is processed through information technology, whether it be smoke or drum signals, painting or "the man-made (sic) system of human language" (Finnegan, 1988 p.3)

While the tendency to see technology as determining the message can be strong, Finnegan is critical of the technological determinist model of communication, arguing that to look at one factor in isolation misconstrues the dynamics of actual social processes (Finnegan, 1988).

Finnegan does make a useful distinction between "the technology-led theory of social change" and "soft technological determinism" (Finnegan, 1988). It may be easier to refer to these as 'hard' and 'soft' technological determinism. The 'hard' school views the use of technology as the creator of social changes. The 'soft' school believes that change comes from the sociocultural environment within which the technology is situated.

Finnegan contends that technological determinists often make a binary split that may be represented as:

Oral

Primitive

Simple

Literate

Advanced

Complex

She argues that technological determinism ignores the sociocultural perspective of communication and that the technological determinism model is deceptive in the study of orality and literacy because of its focus on the medium. This focus draws attention away from the way people use the technologies, make choices and select from (or ignore or even oppose) what is available to them (Finnegan, 1988).

Unfortunately, Finnegan fails to differentiate between the hard technological determinism of Marshall McLuhan's later works and the ecological/cultural perspective of Innis, listing both in the 'hard' category. My argument is that Harold Innis is very much aware of the sociocultural aspects of communication. In fact, I would go so far as to say that Innis did not veer on the side of technological determination, but expressed a concern about the social process of communication.

The hard technological determinists see the nature of technology as determining the outcome - the "medium is the message" (McLuhan, 1964), rather than the message being determined through the sociocultural process. In contrast to such a view I would argue that, rather than the media being the message, it is how the practitioner uses and interacts with the technology that determines the message (Morley, 1980), (Ang, 1985), (Morley, 1986), (Drache, 1995). The reader of the text or user of the technology becomes an important and empowered part of the process of making meaning, rather than meaning being constructed by the nature of the technology. As one critic has said:

By inhaling the fairy dust of McLuhan-mania, we're overlooking process and treating both cultures and techniques as commodities to patent. In reality, they're constantly in flux. (Manji, 1997)

Manji argues that McLuhan's emphasis on the media overlooks the process of communication.

... The best information will not mature into wisdom. It might confer knowledge. It won't confer meaning. Which brings me back to McLuhan and his statement, "the medium is the message." Had he taken his cues from Innis, McLuhan would have come up with this soundbite: "the process is the product." (Manji, 1997)

Manji is calling here for a greater emphasis on the process of communication. Such an emphasis would avoid an over emphasis on the hardware of the medium. Debray's (1996) medium as process model makes a similar point. Régis Debray combined McLuhan with French cultural theory in *Media Manifestos* (Debray, 1996) and suggested that we abandon the notion of medium as a 'thing', in favour of mediation as a 'process'.

To continue with this theme, I would argue that the internet mediates the electronic communication process and, as such, can be considered a medium. When considering the process of communication, the sociocultural context is thrown into a higher profile than the hardware. However, I would argue that 'medium' is a noun rather than a verb. It is the mediation and the use of the medium, the process rather than the medium itself that makes the difference. There is mediation through a medium. The medium does not itself mediate, but acts a conduit for the process of mediation.

A problem with the models of the hard technological determinists, like McLuhan, is that a hierarchical process of communication technologies is built up. Their views would be that there is a potential for new communication technologies to drive out old technologies (so computers supersede television, which supersedes radio, which supersedes print). Such concerns can be found in the sense of panic that arose over the belief that computer use would result in the death of the book.

There is also the related idea that new media, once adopted, drive out older-established ones. Literacy is seen as replacing oral communication or electronic media like television superseding the practice of reading or writing. (Finnegan, 1988)

In contrast to the hard technological determinist model, Innis saw the use to which media were put and the process of communication as imperative in understanding the role of technology (Innis, 1950; Innis, 1952; Innis, 1964; Innis, 1980; Innis, 1995). This approach places an emphasis on the cultural settings of communication media and privileges of communication as a social process.

While McLuhan was influenced by the work of Innis, the approaches of McLuhan and Innis show a number of differences. As Debray points out, Umberto Eco claimed that;

McLuhan mixes together under the same label of *medium* the *channel* or material vehicle of information, the *code* or internal structure of a language, and the *message* or content of a concrete act of communication (emphasis in original). (Debray, 1996 p.56)

McLuhan moved from a position of wariness towards new media (McLuhan, 1962) to one of celebration (McLuhan, 1964), Lewis Mumford moved from the position of championing the benefits of new media to a position of cynicism (Carey, 1997). Judith Stamps argues the case for considering McLuhan's work as comprising two stages, early and late McLuhan. Early McLuhan is influenced by Innis and places less emphasis on the technology than later McLuhan (Stamps, 1995). Technology alone does not cause social or cultural change. It must be placed in a social context. Social context causes technologies to be adopted, rather than seen as a formidable force.

However Debray argues that;

... against the *medium minus code and message* of the McLuhanites, the semiologists set up *code minus medium and milieu*. This was the way the father of modern linguistics wanted it, seeing no meaningful difference between a written and oral transmission (Debray, 1996 p.57).

Indeed, Saussure (the "father" to whom Debray refers) stated that "Language and writing are two distinct systems of signs; the second exists for the purpose of representing the first." (Saussure, 1960). While emphasising the different signs of the two systems, Saussure reduces text to speech. Written text becomes a secondary sign, the signified sign being speech.

Rather than interpreting writing as a secondary sign, compared to orality, Innis saw the two as separate, but complementary, semiotic systems. The complementary nature of these systems can be seen through the development of CMC, which enforces the complementary nature of both semiotic systems. CMC shows us that writing is not just a representation of speech; rather the two are complementary but separate systems as shown by the difficulties of communicating speech in writing where the nuances of verbal communications can be lost.

According to Berger and Luckmann (1971), human babies are being cultured from the start. A baby learns the mother (mothering) role along with getting food; there is no separation of bodily and mental nurturing. The child is simultaneously being physically fed and symbolically acculturated. Human beings, therefore, always see the life world, social relations and self-identity through culture.

Marshal McLuhan similarly believed that cognition could not occur without the action of two human participants. In order for cognition to occur there had to be communication between two participants. Eric McLuhan paraphrased his father's argument as;

Etymologically, "consciousness" means "knowing together" which implies someone else to know with, and through. The other person, as audience, forces each one to utter things and to use words. (McLuhan, 2002)



Snyder (1998) supports the view that technology is affected by the sociocultural use to which it is put.

Hypertext certainly has the potential to affect the cultures of learning in significant ways. No technology, however, can guarantee any particular change in cultural practices simply by its 'nature'. A hypertext classroom can be used either to support new theories of reading and writing or to promote traditional approaches to the study of texts. Teachers who are neither trained in nor sympathetic towards hypertext pedagogy will either ignore or subvert its potential. The use and effect of a technology is closely tied to the social context in which it appears. Hypertext will succeed or fail not by its own agency but by how people and institutions use it. The interests and assumptions of particular social groups socially construct every evolving technology. (Snyder, 1998 p. 38)

The argument being made is that it is the sociocultural setting and use of technology, rather than anything intrinsic in the technology that causes cultural change.

### ***3.3 Dialogue and Community***

Robert Putnam (2001) laments the passing of community in contemporary society and, with it, the loss of "social capital". Putnam sees the lack of participation in voluntary organisations, like ten-pin bowling leagues, as being a result of that loss. Contemporary culture, he claims, is typified more by solitary pursuits, such as watching television, than by participation in community activities. However, Putnam does wonder if the internet will generate increased social capital. Indeed, recent research indicates that those who engage in internet activity are also more likely to be involved in traditional social activities as well (American Behavioral Scientist Nov 2001).

Lockard argues in a colourful fashion "cyberspace is to community as Rubber Rita is to human companionship." (Lockard 1996, p. 225). The underlying argument here is really

that the internet is not about communication but about communication through computers. The medium keeps participants apart and does not give a sense of real human interaction, as noted by such phenomena as “flaming” where abuse of other users can occur within a discussion and escalate through the depersonalised nature of the medium. Two prominent examples of communication through computers are “emoticons” (where typographical symbols are used to replace the non-verbal nuances of face-to-face communication) and “spamming” (where irrelevant bulk mail is sent indiscriminately to a discussion). These instances have led to the drawing up of guides for “proper” behaviour on the internet, referred to as “netiquette”.

Steven Jones (Jones, 2000) disagrees with Lockard and Putnam. He also draws from Innis’ discussion on the spatial and temporal biases of communication media. Jones’ view is that the bias of the internet is not strictly spatial and individualistic. In fact, he goes so far as to argue, “the Web’s bias in the final analysis is towards time and not space” (p. 174). James Carey drew upon an interpretation of Innis when he argued that communication occurs through two models, which he describes as “transmission” and “ritual”. The transmission model is derived from a metaphor of geography or communication and relates to media used for transmission over distance. It becomes a tool for the purpose of control. The ritual model is about the maintenance of society in time and the representation of shared beliefs. I have previously characterised these two models with regard to communities of interest as “evangelism” and “communion” (Hope-Hume, 1997).

Jones sees the internet as breaking down these models of temporal and spatial bias in communication tools.

The internet, I believe, begins at the verge between the print and electronic traditions. The Web, particularly, is a technology that represents the development of electronic expression in a medium sufficiently removed from paper to render it apart from print. (...) The technology on which the Internet is based, namely a “store-and-

forward” mechanism, is inherently time-bound. (...) Space is not so much *overcome* so much as it is fragmented” (Jones, 2000 p. 174).

In attempting to reconcile the transmission and ritual models of communication, Jones is following the ideas of Innis in his work, calling for a balance between the biases of space and time in media.

Oral culture is pre-modern, temporally biased and reflects a predisposition towards tradition, elders, religion or monarchy. It is dialogic and clearly demonstrates the voice of the 'other' through dialogue and argument. Print culture is modern, spatially biased and reflects a disposition towards youth, empire and, latterly, neo-empirical cultural hegemony.

CMC displays both a temporal and spatial bias and therefore does show a new form of mediation. This will be identified in the discussion of the case studies. This bias shows itself in a dialogic/monologic binary, rather than a speech/writing binary. Such a dialogic/monologic binary is closer to the intent of Innis than a speech/writing binary.

Eric Michaels (1985), an American anthropologist who worked extensively with remote Australian communities, admits that it was the theories of McLuhan that originally stimulated his interest in Aboriginal communications. However, Michaels’ work with the oral traditions of those communities led to him to question McLuhan's concept of the “global village” and “electronic primitives” and Ong's concept of a secondary orality.

The proposition that we are entering an information age that might bear a resemblance to oral, nonindustrial societies is a popular conceit associated with Marshall McLuhan's (1962) theories of the communication media. (Michaels, 1985 p.507)

Michaels argues that, in oral societies, knowledge is not equally shared.

Electronic societies (McLuhan) argued, would prove to be more like literate ones. Little evidence of this egalitarianism of knowledge (in oral societies) was offered. (Michaels, 1985 p.507)

Such a view supports Innis' concept of monopolies of knowledge where communities maintain their identity through discourse. Induction into communities of discourse, Michaels found, is not an egalitarian process.

The connection between speech and speaker can also confer particular manipulatory advantage on the choice of hearer. One who has the right to speak has the right to speak to some people and not others. In fact, from a communicative standpoint, Aboriginal social structures both embody and elaborate the constraints on who can say what to whom. This system allows speech (or designs or other information) to accrue particularly high value, indeed to become capital of a particular sort that individuals, and communities in ceremonial exchanges, can manipulate to social and economic advantage. (Michaels, 1985 p.509)

Similarly, in CMC e-learning, those who are considered "expert" because of their knowledge of discourse seem to be privileged in the discussion. This will be shown in later chapters, where case studies will be put forward for discussion.

The relevance of community is important when considering induction into communities of discourse. Johnson-Eilola argues that CMC;

provides vivid examples of the ways in which the activities of writing and reading are transformed and appropriated by widely divergent communities, each of which reconstructs general activities characteristic of hypertext in relationship to that community's goals. Hypertext, like every other text and technology is a social technology. (Johnson-Eilola, 1997, p.43)

In an examination of the way first year university students use CMC; Johnson-Eilola (1998) concluded that this type of writing is a form of bricolage (an assemblage improvised from materials ready to hand, or the practice of transforming 'found' materials by incorporating them into a new work). His argument is that CMC will result in the end of the individually produced essay. Eilola believes that the new emphasis will be on process, rather than product. Creative co-operation, he argues, will replace the private intellectual copyright of ideas.

### 3.3.1 Cyberspace and Virtual Communities

The paperless nature and lack of clear physical location of CMC often leads to it being referred to as taking place within 'cyberspace'. Other terms used include the 'Information Highway' or the 'Infobahn'. As Strate, Jacobson and Gibson (1996) point out the term "cyberspace" emphasises the social and cultural aspects of telecommunications, whereas the highway metaphor favours the commercial and otherwise utilitarian functions of CMC. (Strate, Jacobson, & Gibson, 1996). Strate, Jacobson and Gibson (1996) are interested in the metaphors used to conceptualise cyberspace.

"The *electronic frontier* conceptualizes cyberspace in terms of the natural environment, whereas *information infrastructure* implies a human construction. *Information superhighway* and *infobahn* conceptualize cyberspace as a conduit, a place to pass through, whereas *virtual community* instead emphasizes the idea of an electronic landscape filled with relatively small, stable dwellings." (Strate Jacobson and Gibson. 1996 p.106)

Rheingold (1993) defines cyberspace as "the conceptual space where words, human relationships, data, wealth and power are manifested by people using CMC technology" (Rheingold, 1993 p.108).

These human relationships may be seen as a 'community'. The notion of community can involve either a local community or a community of interest - in short a *lifeworld*. In the second volume of *The Theory of Communicative Action* (1987) Habermas presents in detail his thesis on the relation between "lifeworld" and "system". Lifeworld is the part of human culture that relates to the lived experience. *System* is the part of human culture that relates to the larger worldview. System then is social structure on a wide scale, while lifeworld relates to the particular way that an individual makes sense of the world (Habermas, 1987).

According to Carey (1992), communication can be seen to fulfil either of two functions: the transmission of meaning and information or the fulfilment of ritualistic behaviour. Transmission extends along a spatial axis, while communion binds a community along a temporal axis (Carey, 1992 p.15). As Hollander and Stappers have argued, "... participants in community communication - both senders and receivers - are members of the same social system, the geographical community and/or the community of interest" (Hollander & Stappers 1992, p. 16).

Education seeks to achieve the successful induction of learners into a community of discourse (Lave & Wenger, 1991). Seen from this perspective, literacy underpins all learning, as it is comprehension through language that facilitates the interaction necessary for successful induction into a community of discourse.

Gibson (1996) points out that "almost all our contemporary ideas about pedagogy have been anchored firmly in a paradigm informed by the printed word". The suggestion made is that there has been a shift away from text "as object to text as environment" (Gibson, 1996) as text moves from printed to electronic form. Education is seen as being one of the areas most affected by that change.

CMC holds a promise of dialogue and democratic communities. Arguments for a dialogic model of media are not new. However, the electronic media have not been fully

participatory in the democratic visions of many critics, for example Bertoldt Brecht. At the birth of radio Brecht wrote;

.... Radio is one sided when it should be two. It is purely an apparatus for distribution, for mere sharing out. So here is a positive suggestion: change this apparatus over from distribution to communication. The radio would be the finest possible communication apparatus in public life, a vast network of pipes. That is to say, it would be if it knew how to receive as well as transmit, how to let the listener speak as well as hear, how to bring him into a relationship instead of isolating him. On this principle the radio should step out of the supply business and organise its listeners as suppliers. (Brecht, 1964 p.52)

Radio has become primarily a monologic medium in that it broadcasts rather than promotes dialogue. Some media practitioners point to the talkback radio phenomenon as a move towards a democratisation of the medium. Community stations in the USA pioneered talkback as a means of opening the airwaves to the public. Its appropriation by other stations appears to provide a democratic form of communication. However, in this form, it is highly structured in order to provide the host with almost total power in shaping the discourse, as argued by Higgins & Moss (1982). Rowe (1992) highlights the control that the host exerts over the callers to a talkback show rather than it being a forum for democratic debate.

The nature of CMC allows participants to resist such control by gatekeepers and to participate more fully in a dialogic exchange. This moves CMC to the realms of a participatory medium rather than a monologic broadcast medium, as has been the case with previous electronic media. As such, the medium moves us closer to Ong's idea of secondary orality or Innis' idea of balance between temporally and spatially biased media.

## ***CMC in Teaching and Learning***

Researchers have noted that the defining character of the computer in teaching and learning is the interactivity of the medium (Bolter 1991, Landow 1992, Murray 1997, Turkle 1997). Three specific fields of interactivity have been identified in relation to on-line learning (Moore, 1989).

- Interaction with content (Anderson and Reiser 1985, Gagne, Briggs and Wager 1988, Hannafin and Peck 1988, Tennyson 1981, Anderson, Garrison, Archer and Rourke 2001, Janicki and Liegle 2001),
- Interaction with teachers (Picciano 1998, Jiang and Ting 2000, Coppola Hiltz and Rotter 2001),
- Interaction with other learners (Ruberg, Moore and Taylor 1996, Hawisher and Pemberton 1997, Picciano 1998 Wegerif, Mercer and Dawes 1998, Poole 2000).

Veerman (2000) compared the use of asynchronous and synchronous CMC in a study of students working collaboratively on set tasks. The study reported that asynchronous discussions could be characterised as highly constructive and participants in such discussions were able to add or explain information.

Keiko Kitade (2000) examined how useful CMC was as a learning device for a group of Japanese as foreign language students. The results of the study indicated that CMC provides potential benefits for learning, facilitating comprehensible and contextualised interaction, self correction and a collaborative learning environment.

Baron (1998) argues that CMC, in particular email, shares a number of linguistic characteristics of both writing and speech. According to Baron, there are both technological and social determinants at play in the use of CMC. She provides an extensive review of literature around the differences between speech and writing and succinctly applies this to the nature of CMC. Acknowledging that the medium is still in its early days in terms of linguistic development, she argues that there is an increasing



creolisation of language through email use. Whilst acknowledging the role of the technology in shaping the dialogue occurring through the medium, she argues that in the future the linguistic properties of email will “Result more from social decisions than technological fate” (Baron, 1998 p. 166).

Gary Gumpert and Bob Cathcart (1983) examined the area of mediated interpersonal communication. Their analysis showed that much of what is attributed to orality is better understood as interpersonal communication. However, interpersonal communication is oral, for example letter writing (which is obviously a literate activity). In the same way, McLuhan (1962) suggests that the typewriter represents a movement back to orality (in contrast to the printing press), as the typewriter is used for personal, interpersonal, or impersonal interaction. At the same time, following on from such argument, public speaking has more in common with mass communication forms such as broadcasting than it does with the purely textual form of interpersonal CMC. Dialogue and oratory are very different in interpersonal and mass communications. In the use of CMC in the teaching and learning process it is an interpersonal form of communication.

Sherry (1998) reported several concerns for students using CMC:

- users need to see some intrinsic value in learning;
- finding a voice and having something to say, not knowing what to put into messages;
- the types of dialogue engaged in must relate to the participant's social and cultural context.

In an analysis of an electronic teaching and learning project, Sherry (1998) defined the following characteristics of on-line learning:

- Though 'lurkers' tend to listen rather than participate, there was evidence that lurkers do learn.
- Some participants reported the benefits of collaborative learning as being that it helped comprehension of difficult concepts, clarification and the subsequent independent construction of knowledge.

Lea (2001) in a study of asynchronous on-line teaching found that participants were able to avoid pressure in turn taking. As one student pointed out:

Somebody was saying because they'd been able to sit and think it out and write it out it was more solid as it were ... Whereas if they'd just been talking they wouldn't have had the luxury of a fifteen minute monologue ... you don't get that sort of concentrated point of view when you have a face to face discussion. (Lea, 2001, p. 167)

Jacob Palme and Sirkku Männikö (1997) found, in a study at Stockholm University, that there was not much difference between grades for courses conducted on-line and those conducted through other teaching and learning methods. However, the study did find that, for non native speakers of the language of the course, marks were higher in on-line education. Hiltz (1995) found similar results in a study conducted in New Jersey. Palmer and Männikö (1997) suggest that this result may be attributed to extra time being allowed for the reading of messages and composition of posts in asynchronous communications while in other situations the non native speaker may have difficulty in understanding the language and responding.

On-line learning at Lancaster University meant that teaching and learning was able to take place at a time and place suitable to individual learners and teachers (Armitage and Steeples, 1998). It was also reported that CMC involved a higher degree of collaborative learning (Steeple 1998). Steeples reported that the conferencing environment supports sharing and discussion among members of distributed practitioner communities. The environment enables professional development among peers and, she reports, is a resource that can especially be made available to newer members of the professional community. Whereas previous studies conducted in schools had reported collaborative use of computers due to scarcity of resources (Crook 1994), in this case students working alone were able to work collaboratively without the constraints of having to be physically

located in the same time and space. This collaboration was not due to a lack of resources, as in schools, but because the nature of CMC allowed for such collaboration.

In order for collaborative learning to occur the course needs to be established in such a way that collaborative learning is encouraged, as pointed out by David McConnell (1998) at the same seminar as the papers presented by Armitage and Steeples and Steeples held at Warwick University. McConnell identified two forms of distance learning:

- **Conventional Distance Learning**

The traditional affordances of conventional distance learning have been seen as flexibility in time, place and learning. Against these, McConnell sees the following constraints inherent in this model:

- Academic staff largely decide solely upon content;
- Slowness in updating of material;
- Individualistic (monological) nature of learning involved.
- Unilateral assessment by the tutor
- The educational technology employed primarily maintains a form of positivism in knowledge.

This model, as McConnell points out, is primarily concerned with “dissemination” where knowledge is passed from authority to recipients. This leads to a power imbalance and does not allow for the learner’s active participation in their own learning or collaboration between learners.

- **Networked Learning and Computer Supported Cooperative Learning (CSCL)**

This model, based on action learning and action research, commences from the learning needs and interests of the participants rather than disseminating the knowledge held by an expert (or team of experts) to a novice. CSCL allows for ongoing negotiation between participants during the teaching and learning project. (McConnell 1998)

Pierre Dillenbourg and Daniel Schneider (1995) draw attention to some of the constraints and affordances of text based CMC;

For instance, the cost of interaction being higher with text, the group members may reduce the number of disambiguating sub-dialogues used in social-grounding. At the opposite, in asynchronous text messages, they have more time to build sentences which are less ambiguous. Without video link, members also lose facial expressions which are useful to monitor the partner's understanding. (Dillenbourg and Schneider 1995)

However, as they point out, voice and video mail are not widely used in CMC learning because of concerns about the overload of networks and the limits of currently available hardware.

Hiltz (1995a) reported that “on-campus” and “distance” markets could not be segregated in her study of on-line learning. On-campus students found benefits in on-line learning in that it avoided the time constraints of timetable clashes as well as work and family obligations. Her findings indicated that mastery of course material was equal or superior to that which occurred in traditional classrooms.

She further found that;

- CMC provided convenient access to learning, improved access to teachers,
- Increased participation by learners,
- An improvement in the ability to apply lessons in new contexts and express independent ideas,
- Improved knowledge of the use of computers,
- Increased student satisfaction with learning on the course,
- Students involved in “group learning” are most likely to judge the on-line learning as superior to traditional teaching and learning methods.

Interestingly, she notes, “no two sections of an online course are ever the same, and one is never quite sure what a group of students will do”.

Cordon and Cech (1996) assessed machine mediation in communication by comparing face-to-face communication with synchronous CMC. They found that participants in synchronous CMC adopted the same language tools as those involved in face-to-face communication. Following on from their thesis that machine-mediated communication systems make it possible to observe how participants adapt to different learning environments through different resources, Cordon and Celeb (2002) have added asynchronous CMC into their observations. Drawing upon Schlegoff (Schlegoff 1968, Schlegoff and Sacks 1973) system of;

- “Transmission management”, which examines how participants ensure their message has been received and manage their opening and closing of messages and
- “Interpersonal management”, which looks at how interactions are initiated and concluded. Interpersonal management activities may include preservation of face, expression of solidarity, negotiation or reinforcement of status relations and construction of identity.

The study involved students at the University of Arcadia/Université des Arcadiens who were asked to plan the MTV video awards. This was chosen as an opportunity to explore cooperative decision making in students. Subjects were selected who were familiar with CMC and fluent in their use of email. The study may be criticised in that the students were engaged in a created task rather than in their own sociocultural environment. In contrast, this thesis examines students engaged in a collaborative task directly related to their own postgraduate study. However, despite this criticism of Condon and Cech’s study it is worth pursuing their findings and methodology. Condon and Cech identified the following functions in the communication process;

- Orients suggestion,

- Suggests action and
- Agrees with suggestion

And three types of request;

- For action,
- For information and
- For validation. (Condon and Cech 1996, 1996a, 2002)
- The first two processes (orients suggestion, suggests action) may seem to tie in with my own Initiation procedure, as do the three types of request. The third (agrees with suggestion) of Condon and Cech's functions may be seen to relate to my own Response function set out in Chapter Four. What is missing from Condon and Cech's communication functions is off topic functions coded in my own schemata (Chapter Four) as Chat function. The three types of request function are also included in the Initiation function.

Condon and Cech found that in students' use of CMC there was a similarity between synchronous and asynchronous communication in that both were machine mediated. However, in asynchronous communication much greater time could be allocated to messages. Participants in asynchronous communication could consult their records and references. They concluded that asynchronous communication can produce significant effects on discourse and speculated that differences on the oral/written communication may have more to do with synchronicity/asynchronicity than speech/writing.

Drawing from Herring's (1996) observations about messages posted to electronic discussion groups comprising structures;

- Salutations,
- Introductions,
- Bodies,
- Closings.

Condon and Cech (2002) argue that routine decision making functions occur in the middle (i.e. the body) of the message and the opening and closing of the message function as discourse management strategies.

### **3.4 Conclusion**

It is important that a theoretical framework underpins research. Therefore the previous two chapters have presented a theoretical discussion of issues relevant to this thesis.

This particular chapter commenced with an examination of Orality, Literacy and Cognition. The theory of Ong and his notion of secondary orality were discussed. The arguments surrounding the nature of written and spoken communications were presented. It was noted that commentators have argued that CMC presents a closer of synthesis of the oral and written traditions, primarily in that it allows for observable dialogue within cognitive processes.

While all cognition occurs through dialogue, communication tools present a bias towards monologic or dialogic models of communication. In the past, distance education has relied on monologic print and broadcast media. CMC affords a new level of mediation in that it provides a synthesis of the monologic and dialogic structures of oral and print communications. The role of the tools of communication can be viewed as an important part of the communication process. However, these tools must be seen from an holistic perspective, where they are part of the communications milieu. However, researchers should not ignore the affordances of constraints of media on the message that is conveyed. Whilst not wishing to go as far as McLuhan's (1964) statement "the medium is the message", it would seem that the medium can have an effect on the reception of the message.

Unlike broadcast and print models of distance instruction, CMC allows for peer/peer and peer/mentor dialogue. It allows for transmission through space as well as dialogue. This

interaction allows students to overcome the isolation of distance and work on the collaborative construction of knowledge. Later chapters concentrating on the case studies themselves will examine the effectiveness of such interaction in the induction of students to communities of discourse. They will also provide an examination of these affordances.

In a consideration of the potential pitfalls of a technologically determinist model it was shown that whilst tools do impact upon our cognitive processes, those tools have potential uses that are determined by sociocultural actions.

The chapter then went on to consider the nature of communities of discursive practice and how the affordances of CMC are appropriate as a tool in the dialogical and collaborative construction of communities of discursive practice.

Having examined the wider theories on which this thesis is based the following two chapters (Four and Five) will examine the methodology on which the studies are based.



## **4. Methodology**

### **4.1 Introduction**

The success of any study of this kind relies heavily upon the methodology used and the theory that underpins it. This chapter seeks to support and supplement previous literature as detailed in the previous two chapters and provide a framework for the intended design of the study. It also sets out to define some of the meanings ascribed to the terms used in this thesis.

This particular study is primarily qualitative, using ethnographical and case study methodology. It draws upon sociocultural discourse analysis to provide an investigation of the collected data in the sixth and seventh chapters.

In this chapter a wider view of methodology is considered. The following chapter will describe the particular methods employed in the studies described in Chapters Six and Seven.

The Chapter begins by considering issues around qualitative study. The ethnographical method is described before moving on to examine issues surrounding Case Studies methodology.

The Systemic Functional Grammar tools for discourse analysis are then discussed before moving on to a detailed look at how sociocultural discourse analysis is useful to these studies.

This is followed by a consideration of how dialogue will be tackled in the studies.

The Chapter is set out as:

4.1 Introduction

4.2 Qualitative Study

#### 4.3 Ethnography

#### 4.4 Case Study Method

##### 4.4.1 Triangulation

#### 4.5 Systemic Functional Grammar

#### 4.6 Sociocultural Discourse

##### 4.6.1 Context

##### 4.6.2 Common Ground

##### 4.6.3 Cohesive Ties

##### 4.6.4 Dialogue

#### 4.7 Dialogical Genres

#### 4.9 Conclusion

### **4.2 Qualitative Study**

Research in social sciences is commonly divided into methodology that has been described as either quantitative or qualitative, although this binary approach to methodology has been challenged (Hammersley & Atkinson, 1995). Quantitative study relies upon statistical data and looks for significant variation. Qualitative study looks at the subject of the study within the social and cultural settings in which it occurs. Denzin and Lincoln defined qualitative research as:

Qualitative research is multimethod in focus, involving an interpretative, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them. (Denzin & Lincoln, 1994)

Quantitative and qualitative approaches are not necessarily exclusive (Brannen, 1992), (Hammersley & Atkinson, 1995). Akinnaso (1982) warned of the danger of using purely quantitative studies of language use because:

It is commonplace in social sciences that statistical counts usually capture only 'etic' rather than 'emic' categories, thereby ignoring the underlying logic behind surface behaviour. (Akinvaso, 1982 p. 110)

Kenneth Pike (1967) invented the terms “Emic” and “etic” from the expressions “phonemic” and “phonetic,” Pike argued that, just as phonemic and phonetic could be used to describe two aspects of language, so emic and etic could be used to describe two aspects of a culture.

Emic centres on the lifeworld of the members of a culture, examining the process from an internal perspective, just as phonemic analysis examines that which is meaningful to speakers of a given language.

Etic study refers to external observations, just as phonetic analysis looks at concepts of language significant to linguistic scholars.

By combining both these principles, the researcher can avoid the pitfalls of imposing their own perspective on the subject, while also avoiding a restriction through the world-view of the subjects.

In view of the nature of my research questions, a combined emic and etic approach is needed. As this study is interested in examining the sociocultural aspects of the teaching and learning process, the combined approach is the best way to tackle such a study such as this' as it combines observation with understanding. While primarily qualitative in approach, this study also draws upon quantitative methods. By using quantitative data to support the qualitative analysis, the study seeks to combine both approaches. This combination draws together the two schools of thought, recognising that both methods are not necessarily exclusive but supportive.

### **4.3 Ethnography**

Ethnography was originally a methodology employed in the discipline of Anthropology. Ethnography relied upon the analytical results of fieldwork. It has been depicted as "thick description" (Geertz, 1973). Qualitative studies have adopted the term ethnography to mean research that occurs within a cultural setting. Gudeman and Rivera (Gudeman, Rivera, & Gutierrez, 1990) have described ethnography as a dialogue involving colleagues, informants, friends and theorists. Ethnography allows the combination of etic and emic principles which I have previously referred to.

Hakken (Hakken, 1999) argues that the anthropological fieldwork of ethnography is the most effective method for the study of cyberspace. He sees participant observation as an important grounding for such research. However, as he explains, there are problems inherent in such an approach.

Anthropology manifests multiple ambivalence about technology. In theory, technology is important, but in practice, anthropology generally treats technology as an exogenous variable, a part of the given context. (Hakken, 1999) p. 67.)

Ethnography as a subjective research tool can also suffer from the bias brought to the study by the researcher's own sociocultural and ideological situation. However, ethnography is relevant to this study in that it allows for an examination of the subject within its own sociocultural setting and avoids the artificiality of a laboratory setting for research into human subjects.

### **4.4 Case Study Method**

The case studies in Chapters Six and Seven will provide a background to the wider theoretical considerations presented in previous chapters. Isaac and Michael (1981) claim that "because [case studies] are intensive, they bring to light the important variables,

processes and interactions that deserve more extensive attention" (Isaac & Michael, 1981 p. 48).

Walker has defined case study as "the examination of an instance in action" (Walker, 1993 p. 165). While Walker (1993) highlights a number of problems inherent in the case study method, such as the reliability and validity of data collected, he suggests that case studies can be a valuable tool if combined with other research methods.

#### 4.4.1 Triangulation

Previous studies have shown the desirability for triangulation in research data (Lincoln 1985). Triangulation refers to the correlation of results through multiple sources. This means using different methods and informants when collecting information. Patton identifies four types of triangulation:

1. methods triangulation;
2. data triangulation;
3. triangulation through multiple analysts and
4. theory triangulation.

Other techniques for addressing credibility include making segments of the raw data available to others for analysis, and using "member checks," in which respondents are asked to corroborate findings (Lincoln & Guba 1985, pp. 313-316).

#### 4.5 Systemic Functional Grammar

Michael Halliday developed Systemic Functional Grammar (SFG) from his earlier work in Systemic Linguistics. Drawing from Saussure's Structuralism, SFG seeks to show the systemic nature of language in everyday use. Halliday was particularly influenced by Firth who, despite the fact that he published few works, also made a great impression on a number of other theorists. Firth argued that a single system of analytic principles and categories, or what he termed 'monosystemic linguistics', was inadequate and called for

an approach based on polysystemicism (Firth, 1957). His argument is that a system is a set of options with a choice range of possibilities (Halliday 1986, p. 40, 79). Such an approach takes into consideration social factors and consequently both Halliday and Firth argue the need to take into account the day-to-day social reality of language and the context within which it is used (Halliday, 1986).

Halliday (1978) showed three elements of communication:

1. the type of social action (field),
2. the role relationships (tenor),
3. the symbolic organisation (mode).

SFG examines the metafunctions of language which are described as:

1. Ideational or experiential. This metafunction examines the participant, or actor, the process and the circumstance or goal
2. Interpersonal, which examines the subject, finite - further divided into past finite, present finite and future finite - and predicator.
3. Textual, which divides clause into a Theme and Rheme.

Other important categories within SFG include;

1. Register - texts with meaning in common belong to the same register. The register is determined by the variables of "Field", "Tenor" and "Mode".
  - Field refers to what is being talked about.
  - Tenor describes the relationship between the audience and the speaker/writer.
  - Mode depicts the kind of text that is constructed.
2. Genre - genre describes texts that have structural elements in common. This allows the researcher to identify the "Text Type" of the subject.

Halliday's approach to systemic linguistics has been furthered by the work of others, including such researchers as Dale Spender (Spender, 1980) Bob Hodge and Gunther Kress (1988) and Martin (Martin, Matthiessen, Painter, & Halliday, 1997). SFG examines

texts as socially classed, gendered and historically located. Spender (1980), for example, has looked at how particular discursive registers and genres have become dominant through historical and linguistic processes. Kress sees discourse as the interactive nature of the construction of meaning (Kress, 1994; Kress, 1998; Kress & Hodge, 1979). Discourse according to Kress, is a social process.

## **4.6 Sociocultural Discourse**

This study draws on a range of methodologies, but the theoretical approach underpinning it is that of sociocultural discourse. In light of this, it is necessary to present a definition of the terms that have been applied.

### **4.6.1 Context**

The inspection of SFG has already introduced one notion of context into this study. However, in the sociocultural approach to discourse analysis, the meaning ascribed to the term “context” has a different concept from that used in SFG. One of the problems of defining what is meant when discussing context is that different approaches will often use the same terms in different ways. As Neil Mercer puts it, " No definition (of context) is widely accepted across the field of language studies." (Mercer 2000 p. 17). Sociocultural approaches consider context to be based on shared knowledge (Mercer, 2000).

In order to establish context, ground rules need to be established between language users (Mercer, 2000). These conversational ground rules are "the conventions language users employ to carry on particular kinds of conversations." (Mercer, 2000 p. 28). “common knowledge” or “common ground” further establishes context.

### **4.6.2 Common Ground**

In order to establish communities of discourse, certain ground rules apply (Mercer, 2000) that form the common knowledge brought to the dialogue by participants. For example, this thesis uses the convention of initially spelling out certain phrases in full, then providing, within brackets, the acronym adopted by the particular community of academic discourse to which it belongs. The example here is “Systemic Functional Grammar” (SFG).



Having done this, it is assumed that the reader and the writer both share a common knowledge of that acronym, which will be henceforth adopted in place of the full phrase. Similarly, having explained the meaning of CMC within the context of this thesis, it is assumed that the reader and writer share a common knowledge about the meaning ascribed to CMC.

This shared, or common, knowledge facilitates ground rules for discourse. In the same way, the common knowledge of communities of discourse provides ground rules for discourse within these communities.

In order to establish ground rules, experienced members of a community will act as discourse guides to less experienced members of a community (Mercer 2000, p. 170). This is a process similar to Wood, Bruner and Ross's notion of "scaffolding" (Wood, Bruner, & Ross, 1976).

Common knowledge can be established through a reference to previously shared experience and through subtle linguistic clues, such as cohesive ties. Common knowledge can also be by referring to previous shared experience and through subtle linguistic clues such as cohesive ties and Anaphoric (Back), Cataphoric (Forward) and Exophoric (Outside) references (Halliday 1978, pp. 290–294).

#### 4.6.3 Cohesive Ties

Cohesive ties are another tool for relating the future to the past or the 'given' to the 'new' (Mercer 2000, p. 59). These connect phrases or sentences. Examples may include repeated key words, pronouns and link sentences.

#### 4.6.4 Dialogue

The studies in Chapters Six and Seven will investigate the differences in register between the online dialogue and the academic writing adopted by graduate students. It is thought that the studies will show that the dialogue used in CMC demonstrates that writers switch between different registers.

Bakhtin's colleague, Volosinov (who some commentators believe is in fact Bakhtin himself) claimed that the reporting of speech took two main directions:

- Linear style - reports words verbatim with a clear distinction between the voice of the primary speaker and the reporter.
- Pictorial style - blurs the boundaries between the reporter and the original voice. Under this style, the voice of the other becomes internalised as part of the reporter's own voice. (Volosinov, 1973; Volosinov, 1976)

The studies highlighted in the sixth and seventh chapters will seek to examine how the voice of the other shifts from the linear style to the pictorial style. This dialogical concept, or 'appropriation' of the voice of the other, may be appropriately considered through the use of what Bakhtin referred to as 'ventriloquation' (see Wertsch, 1998 ). (An explanation of the term ventriloquation follows in the next section). It also appears to be particularly relevant to the study of CMC, where the dialogical nature of academic discourse is manifest.

This study will explore the process of appropriation in online teaching through CMC.

#### **4.7 Dialogical Genres**

While Bakhtin (1986) has stated that there are an infinite number of dialogical possibilities, Cheyne and Tarulli (1999) have identified three dialogical genres.

- Magistral Dialogue: the Authoritative Other

This represents the official discourse of the state, the university, Received Pronunciation and the “correct” method of academic discourse. It presents an enculturation of the first voice through dialogical construction of the self. The Magistral voice works through a three-sided dialogue comprising the first, second and third voices. The first voice is that of the tutor/mentor or respondee. The second is that of the student or inductee. The third belongs to the institution or approved academic discourse.

The third voice informs and speaks through the first voice by the process of ventriloquation. Ventriloquation occurs when a voice incorporates the voices of a community of discursive practice (in this case the community of academic discourse). According to Lave and Wenger (1991), this process is not merely an internalisation of the dialogue of the community, but also a process of transformation of participation in community practice. Lave and Wenger referred to this process as becoming a “whole person”, involving “ ... long term, living relations between persons and their place and participation in communities of practice” (Lave and Wenger 1991, p. 53).

The first voice speaks through the authority of the third voice. The first and third voices steer the dialogue towards the conclusion, in this case induction into the community of academic discourse. Such dialogue mirrors Vygotsky’s theory of ZPD. Magistral dialogue may be seen as an apprenticeship under the experienced first voice, guiding the second voice to induction into the third voice.

- Socratic Dialogue: The Questioning Other

This represents questioning dialogue. Ideally, it presents openness to emerging truth. Socratic dialogue may question the first, second or third voices. This is a dialogue amongst peers. The process here relates to Bakhtin’s concept of assimilation, where the voice of the other is incorporated through the method of reworking and re-accentuating it (Bakhtin, 1986).

Socratic dialogue may question the authority of the first and third voices. As such, Socratic dialogue may lead to conflict as it challenges the authority of the first and third voices. This can lead to a questioning of the dominant register of the dialogue, as has occurred within debates such as qualitative/quantitative academic discourse disputes (Hammersley & Atkinson, 1995).

- Menippean Dialogue: Carnival, Misbehaved Children and Other Horrors.

This represents the questioning of the Magistral voice. It becomes apparent in the resistance of the second voice. Menippean dialogue, unlike Socratic dialogue, takes conflict to an extreme. Rather than questioning the first voice, as in Socratic dialogue, Menippean dialogue becomes cynical and oppositional to the third voice. Menippean dialogue leads to a breakdown of the acceptance of Magistral dialogue. This can lead to a rejection of the community of discourse, as in the Anti-University Movement (see for example <http://www.bartleby.com/217/1310.html>). It can also result in a change in the Magistral dialogue as the Magistral voice incorporates the rebellion to its authority in order to negate the oppositional voice.

While a concept of Socratic dialogue was previously discussed in another context, the framework detailed here provides a method for examining dialogue. It is the concept of Socratic dialogue as the questioning other that will be used in the analysis of the dialogue within this study.

#### **4.9 Conclusion**

Through a methodology that is primarily qualitative, but also draws on some quantitative analysis, the studies in Chapters Six and Seven will provide information about the construction of dialogue in CMC. It will further understanding of how an online discourse community works. In addition, these studies will also contribute to knowledge about computer-mediated collaboration in learning written argument.

A survey will provide a check on the process of induction into a community of discursive practice from the perspective of the participants themselves

Some use will be made of SFG in order to analyse the discourse of the data. Sociocultural discourse analysis will provide a social approach to the use of language and provide a framework for the wider discussion that will occur. The concept of Socratic dialogue provides an ideal for collaboration within the teaching and learning process. It is this dialogue that the studies will seek to reveal.

The next chapter will show how the general methodology outlined in this chapter will be applied to the studies in Chapters Six and Seven. It will provide more specific details of how these theoretical tools will be applied and the design of the studies.

The studies themselves will comprise two parts - an initial study of one writing group in Chapter Six, followed by a wider study of writing groups in Chapter Seven. These studies will look for Socratic dialogue to show how the process of induction into the communities of discursive practice occurs. They will also examine how the affordances of CMC can facilitate a dialogical approach to the induction. The studies will argue that dialogue can be seen as a process that moves from Magistral dialogue towards the ideal of Socratic dialogue and that this process mirrors the process of induction into discursive communities.

## **5. Design of the Studies**

### **5.1 Introduction**

This chapter sets out the design of the studies. While the previous chapter defined the broader methodology of the studies, this chapter shows the specifics of the studies and how the methodologies will be employed within them.

Chapters Six and Seven present two studies. The first provides an examination of the group that was most prolific in its number of postings. I have shied away from calling this a pilot study, preferring to show this study and the one in Chapter Seven as distinct and separate studies in their own right. However, the first study will show some of the attributes of a pilot study in that it will test the methodology before moving on to the larger study. It is a close observation of a particular writing group within the Academic Writing Online (AWO99) course. The second is a study of the other groups in addition to the AWO course as a whole. This will provide a closer look at particular practices within a small group and then draw upon the richer data of the group as a whole in the second study.

The research questions are re-iterated. Following this, an explanation is given of how and why the data was collected. A description of the online course studied is set out. This is followed by a description of the particular methods engaged in the studies. Issues around discourse are considered with a description of the types of language looked for in the studies. The practical aspects of data collation are described along with ethical considerations for these studies.

The chapter is set out as:

5.1 Introduction

5.1.1 Research Questions

5.1.2 Background to Studies

### 5.1.3 FirstClass ® Conferencing

### 5.1.4 Background to CESA W

### 5.1.5 Aims of Participants

### 5.2 Method

### 5.3 Triangulation

### 5.4 Software

#### 5.4.1 Types of Software

#### 5.4.2 Concordance Software

### 5.5 Planned/Unplanned Language

### 5.6 Questionnaires

### 5.7 Interviews

#### 5.7.1 Documentation

### 5.8 Ethical Considerations

### 5.9 Conclusion

## 5.1.1 Research Questions

The questions that these studies address are:

- Is asynchronous CMC an effective tool for induction into a discourse community?
- Can CMC effectively promote the development of academic argument?
- Does participation in on-line learning make contributors construct a community of learners?
- How does dialogue in CMC collaboratively construct knowledge?

## 5.1.2 Background to Studies

In order to examine issues surrounding CMC and cognition, the course Academic Writing Online (AWO) on FirstClass ®, conducted at the Open University in 1999/2000 will be the subject for examination. The reason AWO was chosen for these studies is that

it provides a CMC learning environment in a higher education institution aimed at improving the academic writing of postgraduate students and other participants. As such, it allows us to see how those participants incorporate the voice of the other and work collaboratively through dialogue in their induction into academic discursive practice.

This chapter sets out to provide a background to the issues relevant to these studies, to present questions and to analyse the discourse of AWO. A section on language and one on grammar both serve to set out the background to the issues.

### 5.1.3 FirstClass ® Conferencing

FirstClass ® is an electronic messaging and conferencing system. It allows email, conferences, sub-conferences, file exchange and chat. The conferencing system operates by allowing users to post to a particular conference or sub conference. The messages are stored and viewed asynchronously. The controller of a conference group may set permissions (or restrictions) that allow or disallow certain members of the FirstClass ® system to view that particular conference.

### 5.1.4 Background to CESAW

The first Academic Writing Online course examined was conducted in 1999/2000 (AWO99) (hence the '99' tag) at the Open University UK (OU). Whilst the servers and the majority of participants were located in Milton Keynes, the technology made it possible for students resident elsewhere to also have access to the group. This afforded participation by disabled and distance students who would normally be excluded from participation in face-to-face meetings. AWO is the major sub conference of Conferencing Environment to Support Academic Writing (CESAW)

CESAW has been described as:



(CESAW) consists of an interactive forum, resources to support writing, meeting rooms for writing and reading groups, discussions, a writing repair workshop and any other facilities which get added as we go along.

A course in academic writing will be run each year within this environment. This course will start in October of each year and continue on to July. The first few activities in the autumn and spring are shared by all on the course. Around February/March the course splits into two strands - one to support First Year research students who need to write an end of First Year Report or Extended Proposal. The other strand to support the writing of academic research articles - either conference papers or journal articles.

The course element of CESAW will be based on collaborative learning and group work. At fixed points in the course experienced writers will be asked to give comments on the work in progress. These 'experienced' writers may themselves be participants on the course. (Wegerif, 1999)

The "course in academic writing" to which Wegerif refers is AWO. AWO is conducted in an online setting supplemented with a few face-to-face seminars for those who are full-time students on campus. Participants in AWO comprise postgraduate students and academic staff at The Open University. Within CESAW, there are a number of sub conferences. As an online course, AWO leaves trails behind it, in the form of postings to the discussion that allow research into the dialogical nature of the discussion.

CMC allows us to see the dialogue and examine how it is used in academic discourse. This differs from both face-to-face communication, which leaves no record of the discussion, and written communication, which obscures the nature of the dialogue because it shows the completed academic writing after the dialogue has occurred.

### 5.1.5 Aims of Participants

Participants entering the AWO99 project did so with their own aims and agendas.

One need that was expressed was a desire to engage in collaborative learning with other participants.

“Looking forward to collaborating with you” (P1 - Research Intros 26/3).

In the following postings, the participants referred to the affordances of CMC in overcoming the spatial bias of traditional teaching methods. They pointed out that the medium overcomes problems for those who may not otherwise be able to participate in more traditional teaching/learning environments.

I live in W. Yorks and have 2 young children so don't get to MK as often as I'd like, so this presents a good opportunity for contact via the medium I use most (e-mail) (P2 - Research Intros 15/4)

Working remotely as I do for most of the time, I have found it difficult not to have this sort of feedback from my peers on campus easily available. The interaction facilitated by conferencing should be invaluable in honing writing skills. (P3 15/4)

Another desire identified by AWO99 participants was for a writing environment where non-native speakers could be inducted into necessary English writing skills for academic discourse.

... English is my second language. I hope AWO99 could help me improve my academic writing. (P4 29/3)...

English is my second language so, I really need to develop my academic writing skills. I hope that AWO99 will enhance my writing and I aim to produce a paper by the end of the course (P1 26/3).

Users other than non-native English language users also expected to benefit from the course:

I have been at this part time PhD game for much too long - and I need to get it finished. I hope that this 'course'/forum will help to focus my mind on the task in hand. I have also been remarkably unsuccessful at getting my journal publications in the past - and want/need to improve my performance in this area! (P5 29/3)

The participant here sought guidance on improving his/her academic writing skills for a specific purpose, namely submitting articles for publication.

## **5.2 Method**

The research will be primarily conducted on a qualitative basis (quantitative methods are incorporated) and triangulated through analysis using discourse analysis, ethnographic (participant observation) and case study methods.

Discourse analysis will be used to research transcripts of online work from the AWO99 courses conducted at the Open University. A close textual analysis will initially be conducted in order to investigate the research questions presented in Chapter Four. Narrative will be used to evaluate rhetorical effectiveness. A sociocultural analysis will be applied to the text.

Open interviews will be conducted with selected students who participated in AWO99. They will be asked how effective the medium was as a collaborative learning tool. A

questionnaire will be administered as a pilot to various students who participated in the course.

### **5.3 Triangulation**

The research will be doubly triangulated using discourse analysis, questionnaires and interviews along with discourse, ethnography and case study methodologies.

## **5.4 Software**

### **5.4.1 Types of Software**

Software cannot conduct qualitative research. Software instead facilitates qualitative research (Fielding 1995). Nigel Fielding has identified three basic types of software that are used in qualitative research;

text retrievers,

code and retrieve packages and

theory building software.

However, many software packages rely on coding the text, or corpora, before using the tools of the package. As Edwards and Mercer (1987) have pointed out,

Coding and counting schemes rely upon the assumption of particular categories of speech meaning the same thing each time they are used.  
(Edwards & Mercer 1987, p. 5)

In these studies, therefore, it was deemed necessary to use a concordancer, which falls into the text retriever category. This was considered the most appropriate software method, as it retrieves key words or phrases in context. This provides the most suitable examination for a sociocultural approach to discourse analysis.

### **5.4.2 Concordance Software**

A shareware concordancer called Simple Concordance Programme software, available at <http://www.textworld.co/scp> will be used to assist in the qualitative analysis of texts. This software, while presenting many functions, will be used to search for Key Words In Context (KWIC).

The software also allows for counts of words and/or phrases. This particular software was chosen because of its ease of use and availability. It allows for a search for particular words and phrases and details of their use in the context of the document.

### **5.5 Planned/Unplanned Language**

Within the aspect of CMC being examined in these studies, I will consider the distinction between planned and unplanned writing (Baron, 1998). As has previously been noted, Yates (1996) shows that CMC destroys the boundaries between spoken and written registers of language. Biber (1998) argues that distinction is not always cut and dry. The distinctions, as Biber draws them, are between what he calls "formal spoken", "informal spoken", "formal written" and "informal written". The formal communicative activities, according to Biber, may often have more in common than a simple binary division along the grounds of speech/writing. Examples of formal/informal, planned/unplanned writing will be presented in the following chapter. In fact, academic writing belongs within the formal written style, while non-academic writing belongs within the informal written register. However, even these categories cannot be exclusive. They operate on a continuum.

### **5.6 Questionnaires**

"The humble questionnaire is probably the most common research tool in the social sciences" (Fife-Schaw 1995a, p. 174)

Questionnaires provide an effective low cost method of gathering data (Fife-Schaw, 1995) (Fife-Schaw, 1995a). Chris Fife-Schaw claims that questionnaires are "of a good enough quality to (...) test hypotheses" (Fife-Schaw 1995a, p.175).

Munn and Drever (1990) have identified the following advantages and limitations in the use of questionnaires.

Advantages:

Efficient use of time

Anonymity

The possibility of a high return rate

Standardised questions

Limitations:

Description rather than explanation

Superficiality

Lack of preparation.

These limitations will be overcome in these studies through the additional use of interviews and textual analysis. The questionnaire is administered as a tool to supplement other methods.

The questionnaire used in these studies is in two parts. The first part is based on a Likert rating scale design that asked respondents to rate their response to a range of questions. The second part of the survey included a space for other comments and asked respondents to group themselves according to age range and gender. The questionnaire also asked respondents if they were willing to participate in further research and so identified potential interviewees.

The null hypothesis in the case of this questionnaire is that items will be intercorrelated and that they will correlate positively with the total score. This will be checked statistically. ( $\chi^2$ )

## **5.7 Interviews**

"The interview is a virtually infinite tool for research" (Breakwell 1995, p. 230).

Philip Woodhouse shows that each interview should be used to test the "working hypothesis" developed through previous interviews (Woodhouse 1998, p. 137). Woodhouse has identified the following comparative characteristics of structured surveys and semi-structured interviews:

Structured Survey	Semi-structured Interviews
Design completed before interviewing starts	Design continues in interviewing phase.
All informants selected before interviewing begins	Informants identified progressively, making use of findings from earlier interviews.
All questions defined before interviewing begins	Questions are identified and modified in response to understanding or information gained in earlier interviews. New questions or aspects of enquiry may emerge during the course of an interview
Identical set (questionnaire) addressed to all informants	Questions or topics of interviews tailored to different informants, and different stages of the enquiry (e.g. to elaborate or check on earlier findings)
Informants chosen as representative sample of the wider population following the <i>probability</i> criteria	Informants chosen to explore a range of different types of knowledge or perspectives, not linked to a quantitative representation of the wider population
Data 'reduced' to understandable patterns using statistical analysis	Data 'reduced' to understandable patterns by comparing what different informants say about specific themes or questions
Findings validated by probability criteria: the calculation of the likelihood that patterns observed in the data have arisen by chance	Findings validated by triangulation: does information from different sources lead to the same conclusions?
Most suited to answering 'What?' questions, less effective in answering 'Why?' questions	Well suited to answering 'Why?' questions. Can answer 'What?' questions but findings cannot be used to calculate (infer) the distribution of characteristics in the wider population

(Woodhouse 1998, p.137)



### 5.7.1 Documentation

Interviews will be recorded onto audiocassette and then written transcripts will be made. The substance of the interviews will be documented as well as observations on the context of the interview.

### 5.8 Ethical Considerations

The studies followed the revised ethical principles of the British Psychological Society. Interviewees were asked to sign a consent form.

### 5.9 Conclusion

The methodologies presented in this chapter provide a range of triangulated approaches to the studies. They should reveal the dialogical nature of the interaction on the AWO99 course. They provide empirical support to the larger theoretical questions set out in Chapters One, Two and Three and support the wider theoretical approach of this dissertation.

Initially the research questions were revisited. The online course (AWO) was described and the FirstClass ® conferencing environment in which it occurs was presented. The aims of participants in the course were presented from data collected. Following this, a description of the methods employed in the study was presented, noting that the findings would be triangulated.

A summary of the discursive formations of planned and unplanned writing was considered. This will demonstrate the move from dialogue to the apparent monologue of the academic writer.

The nature of the questionnaires, interviews and documentation was described and ethical considerations for the study noted.

The first study will test the methods and provide a close examination of one particular writing group (the most active) in AWO99. The second study will widen the research to test the greater amount data of the larger AWO group.

## **6. Study One**

### **6.1 Introduction**

This chapter examines the writing room BJD that was established as a component of the AWO99 course. It draws upon emic and etic principles, drawing upon textual analysis, questionnaires and interviews with participants. The study was designed to contribute to existing knowledge on the collaborative use of CMC as a teaching and learning tool. The study was conducted using a real life course (AWO) which was developed at the OU This thesis will identify participants on the course by using the letter P, followed by a number.

The framework was developed to provide an holistic approach to evaluation, focusing on the pedagogical, cognitive and affective aspects of the data. The context of the course was considered alongside the content.

It is set out in the following manner:

#### **6.1 Introduction**

##### **6.1.1 Participation**

##### **6.1.2 Description of Data**

#### **6.2 Discourse**

#### **6.3 Textual Analysis**

##### **6.3.1 Common Ground**

##### **6.3.2 Formal/Informal Writing**

##### **6.3.3 Patterns of Dialogue**

#### **6.4 Academic Writing**

#### **6.5 Questionnaires**

#### **6.6 Interviews**

#### **6.7 Participant Observation**

#### **6.8 Discussion.**

This chapter will show how a community of learners is established and how that community learns through dialogue. The learning objective of this community is collaboration on the construction of discursive practice. The study aims to demonstrate that CMC allows the researcher to examine the dialogical construction of knowledge and that CMC overcomes the constraints of both printed and oral communications and provides a new medium of communication. While it has been argued that print and oral communication obscure the dialogical construction of knowledge in that print is a monological medium (Vygotsky 1987, p.21) and oral communication leaves no permanent record, CMC provides a record and exposes the dialogical nature of learning.

The BJD writing group had the largest number of postings within AWO99. Because of this, it is anticipated that this group will provide useful data on the dialogical construction of cognition. Although the participants made significant progress in working towards the outcome of the course, none was successful in completing the course.

Successful completion of the course, according to course guidelines, requires the posting of a completed first year report, conference paper or journal article. Despite their failure to complete, this group was the one with the largest number of postings. This means that it should be able to provide rich data, which can be used to examine the process of induction into academic discourse as it happened. It should also be able to show how the dialogue occurs around that process and allow an examination of how a community of learners is developed through the medium of CMC.

### 6.1.1 Participation

The BJD group comprised three female students and one male student. All were in their first year of study as full-time research students at the Open University. One student was studying for a course in Psychology, one in Education, one was enrolled for a course with the Institute of Educational Technology (IET) and one was a enrolled jointly with IET and the Knowledge Media Institute (KMI).

Three mentors, two males and one female, performed the role of acting as inductors. One mentor was from Education; one from Psychology and the remaining mentor was from the Institute of Educational Technology (IET). Although some mentors, were responsible for the supervision of individual students within the group, this is not the case for all mentors. Mentors commented on the work of all the participants, rather than that of those they supervised (if they were supervisors). In this way the dialogue could be seen to occur on a wider basis than the normal one-to-one supervision of the PhD teaching and learning process.

Both mentors and participants were drawn from different faculties, though all could be broadly grouped as social sciences. The cross dialogue within the social sciences can be seen to be one of the affordances of CMC learning and teaching. Also, the small number of participants (4) and large number of mentors (3) provides a style of dialogue between participants and mentors that cannot be afforded through face-to-face tutorials in a conventional university setting.

The role of the mentor on CESAW is essentially that of a more experienced colleague reviewing and commenting on the texts of a relatively less experienced colleague. The mentor is expected to have some experience of reviewing articles for journals, papers for conferences or first year extended proposals for the end of a research student's probationary period. This experience will be called upon in commenting on the written texts produced by writers within CESAW

(P6 17/4/99)

### 6.1.2 Description of Data

The arrangement and nature of the AWO99 course is set out using the conference programme FirstClass ® that has been detailed in Chapter Five. Here I describe the data

as it specifically occurs within the DJB group. Of the 14,566 words comprising the group's 56 postings, 2,474 were unique.

In order to examine the collaborative construction of knowledge through dialogue, a concordance trawl of first and second person pronouns was applied. Through the interchange between first and second person pronouns, it is possible to see how participants relate to the voice of the other in constructing meaning through dialogue. The key words of the first person, "I"/"we"/"us"/"our", yielded a count of 520. Words signifying the other, "you"/"them"/"they"/"their", yielded a count of 328. The text was skewed towards the first person rather than the other in the dialogue. The count of first and second person singulars showed that the word "I" was the seventh most commonly used word (422 times) after "the"/"to"/"of"/"in"/"and"/"a". "You" was the eleventh most commonly used word<sup>1</sup> (236 times).

When examining the use of the word "I" it can be seen to differ according to the context. Sometimes it denoted a cognitive process as in "I think". Sometimes it preceded an action word as in "I completed an MPhil"<sup>2</sup>.

The use of "I think" sometimes denoted a polite suggestion as in "Given your framework I think that you could..." On other occasions, it denoted uncertainty as in "I think I have a kind of a broad idea..."

## **Postings to the Group**

I have chosen to look primarily at the students (inductees) in the group, rather than the tutors/mentors (inductors), as the study revolves around the process of induction. An

---

<sup>1</sup> This is even more of a gap between the first person singular and second person singular as "you" indicates both the singular and second person plural.

<sup>2</sup> Examples are taken from the BJD AWO99 discussion.

examination of the process as it occurs in inductees could be expected to reveal more data than an examination of inductors, as it is the development of academic argument by these participants that is of most interest in the context of this thesis.

The group posted as follows:

Participants = 42 messages

Mentors = 21 messages (Note: proportionally more messages from mentors)

Others = 3 messages

Individual postings from participants were:

P8 = 8 messages

P9 = 14 messages

P7 = 14 messages

P4 = 6 messages

The group was set up on the 24<sup>th</sup> of March 1999, initially with three students. P4 subsequently joined them on 15<sup>th</sup> of April 1999. P4's late entry into the group explains, in part, his/her lack of postings. In addition, both P9 and P7 have English as a first language, which could explain their prolific postings.

P8 = 1148 words.

P9 = 7930 words

P7 = 4475 words

P4 = 1013 words<sup>3</sup>

---

<sup>3</sup>If the headers are stripped off, the word count is:

P8 = 1011

P9 = 7716

P7 = 4263

P4 = 921

The average words per post (without headers) were:

P8 = 126.38

P9 = 551.14

When all material directly irrelevant to the actual message (headers and quotes) are stripped out of replies, the average words per posting were:

P8= 108.5

P9 = 400

P7 = 187

P4 = 115

The description of the data will be taken up with more extensive analysis in section 6.3.2.

## **6.2 Discourse**

Discourse is the overriding concept of this analysis. The textual and data analysis all occur within a discursive framework. A discussion of the notion of discourse as it relates to this thesis is found in Chapter Two (section 2.3). However, it is worthwhile to present a brief summary of the meaning ascribed to discourse in the context of this thesis.

Discourse is seen as a dialogical practice occurring within a sociocultural framework that informs particular methods of communication. It also refers to the wider framework of communicative action. As discourse is the overriding model for analysis, it seems to be worthwhile to devote a section to discourse analysis here in order to allow additional examination from a broader perspective than that given by the close textual analysis further developed in this chapter. The dialogical nature of discourse relates to three “coordinates of dialogue” (Kristeva, 1986), the writing subject, the addressee (ideal reader) and exterior texts.

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P7 = 304.50  
P4 = 153.50

However, when the direct quotes are stripped out of replies to messages, the word count without headers is:  
P8 = 868  
P9 = 5602  
P7 = 2623  
P4 = 691



The following section uses discourse analysis to examine the language used by participants in order to analyse the dialogue occurring within the text. The text is drawn from an introductory posting to the group. This particular text was chosen as an example of the style of unplanned writing used in the AWO99 course. While it sets out academic principles and thinking, it does so in a register more closely aligned to conversation than to formal academic writing. As such, it illustrates the difference between the roles of speech and writing. CMC allows an examination of material that has been written but may normally be delivered in oral form as used in a tutorial or group discussion, for example. This piece serves the same role as a spoken introduction in face-to-face meetings<sup>4</sup>. The analysis is drawn from a reading of the text shown below and shows how the text works in terms of establishing communication and dialogue.

Hi everyone:

<Greeting - sets communication, friendly introduction to discussion - allows for further discussion>

Sorry for late

<Seeks to atone for late entry to discussion- friendly in tone, implies an expectation of a positive Response>.

I am P4, first year research student at \*\*\*

<Introduces him/herself and establishes his/her credentials>

My current area of interest is culture, gender and IT.

---

<sup>4</sup> The study retains the spelling and spacing of the original postings throughout.

<Expresses his/her area of expertise and draws attention to his/her particular area>

Gender and IT is long term issue,

<Establishes reason why this research is important>

but most of research has been carried out without culture-fair.

<And explains how s/he can contribute to the area>

I hope current research could understand how culture influence gender difference in IT and make a contribution to IT- efficacy.

<Identifies his/her aims and allows other collaborative workers to identify his/her needs>

As you can see,

<Points to an expectation of a shared knowledge>

English is my second language.

<Expresses concern over a need s/he sees as excluding him/her from academic discourse>

I hope AWO would help me improve my academic writing. (P4 15/4)

<Directly expresses his/her expectations from AWO>

The participant is expressing a concern over his/her level of expertise in academic discursive practice and is actively seeking collaborative participation in learning the necessary literary skills for academic discourse.

Dear P10 (and others),

<Greeting acknowledging presence of other participants in a formal (written) style>

Unfortunately, I don't think I will be able to put anything up for another week or so.

<Puts participants in the picture regarding his/her own participation - provides social interaction>

P7, P4 and I (and P8 we hope), decided we would like to extend awo over the summer and aim to put up our final papers for around the end of July.

<Message to mentors>

(That's right isn't it P7? P4?)

<Seeks affirmation>

It would be great if you and other reviewers would continue to provide feedback, although we realise you may be too busy with summer school etc.

<Call for more collaborative help>

P7, your abstract looks interesting, hope to find the time to comment soon, (P9 23/6/99)

<Complimentary tone and seeks to explain in a friendly manner why s/he can't currently comment>

The informal tone of the writing demonstrates a cross between the registers of speech and writing. While there is some formal address (Dear P10), the dominant register is informal (use of first names and familiar terms of address). This dominance of informal address shows a friendly exchange between peers.

The participant seeks affirmation and encourages others to respond - (That's right isn't it P7? P4?).

The example shown here demonstrates how participation in online learning helps construct a community in the nature of the language and style used and, in this case, that construction is specifically aimed at a community of learners. The participants are engaged in asking questions, seeking affirmation and establishing a relationship with other participants.

The text also provides an example of how dialogue in CMC collaboratively constructs knowledge in that the writer is leaving her/his post open for response, actively inviting dialogue through the nature of her/his words and discourse.

### **6.3 Textual Analysis**

#### **6.3.1 Common Ground**

Introductory postings to the conference by participants establish common ground, as in the following example:

This paper looks at women and information technology in the context of cross-cultural perspective between China and Britain. The paper begins with an overview of literature review in this area and goes on to consider the reasons for conducting a cross-cultural study. It suggest using both emic and etic principles to conduct cross-cultural study, and briefly discusses imposed etic and derived etic. An overview of Chinese new technology is given followed by that of Chinese women in employment. It spells out the implications of gender in Chinese culture, poses research questions and mentions difficulties which might be encountered. (P4 15/4/99)

However, where there is an assumption of common ground that is not there, clarification is sought, as in the following posting from participant P7:

>It suggest using both emic and etic principles to conduct cross-  
>cultural study, and briefly discusses imposed etic and derived  
>etic.

Given the audience for this abstract I think these terms need to be explained. I have no idea what they mean. (P7 15/4/99)

P4 posted the following Response to P7's query:

Emic and etic are terms originally employed by the anthropologist Pike (1954). These neologisms reflect concepts long used in linguistics to indicate the differences between phonemics (the study of sounds whose meaning-bearing roles are unique to a particular language) and phonetics (the study of universal sounds used in human language, their particular meanings aside). Later(1967) , Pike made it clear that emic and etic should be thought of as designating two different viewpoints for the study of behaviour--the etic viewpoint which studies behaviour as from outside of a particular system, and as an essential initial

approach to an alien system; the emic viewpoint which results from studying behaviour as from inside the system. " ( Trainds, Human behaviour in global perspective, P54 )

I hope above piece explained etic and emic these term.

(P4 15/4/99)

In a synchronous or face-to-face dialogue, late entry would prevent effective common ground for a latecomer to the discussion. P4 first participated in the discussion on April 15<sup>th</sup> 1999, three weeks after the conference began. As Graddol (1989) points out;

A late-comer to a face to face interaction, whether a classroom or a Chat, is in an unprivileged position compared with existing members and this may create a power inequality which can take a long time to repair.

In this particular discussion, although P4 arrived late s/he was able to recapture all previous discussion because of the textual nature of CMC and the trails left behind.

### 6.3.2 Formal/Informal writing

In section 6.1.2, the data was described in terms of word counts. Here the data is examined as examples of formal and informal writing. As detailed in Chapter 4, Biber (1991) has shown that one of the distinguishing features of academic registers of writing is the formal nature of the text compared to the informal nature of conversation or personal letters. Arguing that the nature of CMC requires a new approach to examining such registers, Baron (1998). claims that the primary distinction in language use is between planned and unplanned speech. Therefore, formal (planned) writing and informal (unplanned) writing will be used to differentiate between the texts posted to the AWO99 discussion.

Three of the participants had only one piece of formal (planned) writing in their postings. However, the male member of the group had two examples of formal (planned) writing. The word “I” is not used in any of the formal (planned) writing. Responses and Chat used first and second person pronouns.

In a traditional teaching model, the teacher/tutor can control the discourse. Participants in CMC, however, can respond or initiate discussion at times, or on subjects other than those controlled by a tutor/facilitator. While it is possible for a controller on the FirstClass ® system to delete or alter postings and so control the discussion, in this particular case that has not happened.

### 6.3.3 Patterns of Dialogue

This study supports those who argue for dialogue in the construction of meaning (Wertsch, 1998) in that the study shows that real dialogue does indeed occur in the context examined here, the use of CMC in AWO99.

On looking at the postings, a model of dialogue was identified where an initial post was put up for discussion followed by Responses. There was also a third element of other postings that may be considered as ‘off topic’ or Chat. The model developed here is categorised as Initiation/Response/Chat (IRC).

An Initiation is a post that clearly introduced a topic for discussion. Responses are postings that clearly responded to one or more Initiations and Chat denotes those postings primarily off topic from the primary academic objectives of the course. Chat may include such details as the discussion of the group icon or explanations as to why a participant was late in posting to meet a required deadline.

All the texts were task focussed, in that they all had communicating goals and functions. In terms of the task of AW099 in providing the medium for the teaching and learning of academic writing, Initiation and Response postings were task focussed, while the Chat postings were not. This, of course, is problematic in the light of Graddol's (1989) aforementioned argument that Chat is part of the teaching and learning process.

P8 has two Initiations, three Responses and three Chats.

P9 has three Initiations, eight Responses and three Chats.

P7 has five Initiations, three Responses and six Chats.

P4 has two Initiations, one Response and three Chats.

Total = twelve Initiations, fifteen Responses and fifteen Chats.

Responses that add to the planned writing were coded as such. Those coded as Chat were writing around the main topic. (In CMC, participants often describe such writing as "off topic").

The percentages of the individual member's postings are:

	<b>Initiation</b>	<b>Response</b>	<b>Chat</b>
<b>P8</b>	25	37.50	37.50
<b>P9</b>	21.43	57.14	21.43
<b>P7</b>	35.71	21.43	42.86
<b>P4</b>	33.33	16.67	50.00
<b>Total</b>	28.57	35.71	35.71
	[ These are task focussed ]		[ Not task focussed ]

- Initiation and Responses are directly academic related
- Chat consists of texts that occur around academic dialogue]

**Table 6.1 IRC**

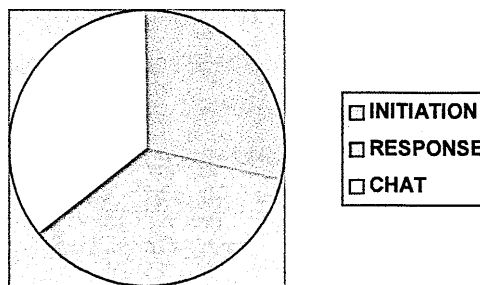


While the Initiation and Response postings are related to the teaching and learning purpose of the course, Chat postings show dialogue within a larger framework. Chat helps to establish a sense of community for the participants. Graddol (1989) claims that informal talk is relevant to the learning process. In the exchanges listed here, a number of informal chats occur between participants. Similarly, some of the responses exhibit an informal style of exchange that shows the dialogue occurring on an unplanned informal basis.

I hope you don't mind, but since I don't know much about your area my comments on your work aren't exactly high level;-). (P9 30/4)

This particular example shows that the respondee hedges the impersonal nature of the written medium through use of conciliatory language and an emoticon. In these exchanges, dialogue is occurring around academic discourse in a different register, compared to that of the formal written academic register.

The following chart (Chart 6.1) sets out the Initiation Response and Chat postings for the DJB group. It allows a comparison of the three categories.



**Frequency of Mode of Response in DJB - IRC Chart 6.1**

Many of the Responses become Initiations of another discussion and so the dialogue moves on.

A discussion occurs where some Responses become Initiations for further Response. CMC places more control of the discourse in the hands of the students and moves away from the traditional model of teacher/student, where knowledge is imparted to an apprentice towards a model where learning is a collaborative task involving all. As such, in this instance, it demonstrates a more co-operative style of learning.

In the examples that have been detailed in this chapter, the nature of asynchronous CMC makes the learning through language (dialogical) nature of the induction apparent.

#### **6.4. Academic Writing**

Two types of text were identified within AWO99, planned and unplanned. When considering a breakdown between planned and unplanned writing, the primary function of the text was examined. Planned writing was identified as writing that was within the academic register and intended to be formal in style. Unplanned writing, while possibly being discussion on an academic subject, was set out using a more informal register and did not fit into the genre that could be clearly defined as “academic writing”. In this sense, planned writing can be referred to as writing in the style of a journal article or thesis chapter.

In the group’s postings there were 8033 words dedicated to unplanned writing, while planned writing totalled 5935 words. It can be seen that there is a large amount of dialogical interaction around the construction of academic writing occurring here.

Planned writing was supported by a large body of unplanned writing indicating the talk that occurs around induction into academic discourse. The “talk” around the planned writing demonstrates the dialogical nature of that induction. Academic discourse is not produced without talk of a collaborative and dialogical nature. This notion will be further examined in Chapter Seven.

In order to examine the differences between planned and unplanned writing, the positive and negative polarities of the writing were examined following the work of Biber (1991). Biber showed that formal language is more positive in mode than informal language. A concordancer trawl through the text (after headers and quotes were stripped off) looking for modal verbs revealed that the positive messages comprised 94.07% of the total messages. However, a trawl of the academic text revealed positive messages that comprised 96.92% of the total. The non-academic text has 93.17% positive messages, which makes a difference of 3.75% between the positive text in planned writing and the positive text in unplanned writing.

Misspellings in the unplanned writing comprise 0.48% of words compared to 0.18% of words misspelled in the academic postings. Clearly, the academic postings were more strongly planned and checked than the non-academic postings.

While the majority of words are clearly dedicated to planned writing, if the postings are split into predominantly planned or unplanned writing, the pattern is:

Academic postings = 12

Non-academic postings = 30.

There are more than twice the numbers of non-academic postings than academic postings, but the number of words per posting average out at:

Academic = 494.58

Non-academic = 267.77.

So there are, on average, almost twice as many words in the planned than in the unplanned writing. There is a significant difference ( $p < 0.001$ ) between the word count per posting for planned and unplanned writing. There are significantly more postings that are non-academic ( $p < 0.01$ ) but the word count for academic postings is significantly higher ( $p < 0.001$ ). This indicates a notable number of postings around the task.

## 6.5 Questionnaires

From a textual examination, this study now moves to an examination outside the text, beginning with questionnaires. Questionnaires were sent to three<sup>5</sup> participants from the BJD group (see Appendix 1). The questionnaires were aimed at gathering information on the participants' attitudes to AWO99 and information to assist in interviews. Details on how questionnaires were set out can be found in Chapter Four. Two questionnaires were returned, which revealed the following information:

	1 Strongly unfavourable	2 somewhat unfavourable -	3 undecided	4 somewhat favourable	5 strongly favourable
AWO was effective in developing academic writing skills		XX			
Peer interaction in AWO was effective		X	X		
Comments from peers were useful to my writing skills			XX		
It was useful to the development of my own academic writing skills to make comments on others writing			X	X	
The interaction amongst peers in my writing room was effective		X			X

<sup>5</sup> There were four participants in this group, but as participant observer I did not participate in the survey. My own observations are recorded later.

The majority of the members in my writing room made significant contributions to the room		X		X	
AWO represented the writing needs of my discipline.		X	X		
Comments from mentors were useful to my writing skills			X	X	
	<b>1</b> Strongly unfavourable -	<b>2</b> somewhat unfavourable -	<b>3</b> undecided	<b>4</b> somewhat favourable	<b>5</b> strongly favourable

Analysis of the Responses to the second part of the questionnaire revealed the following: Whilst P9 was critical of the AWO99 course, stating that s/he felt that s/he didn't learn anything s/he did not already know, s/he did state that s/he felt it was effective in helping to feel part of an academic community. P8, who responded much more positively, felt that AWO99 was not effective in making him/her feel part of an academic community. This will be explored in the discussion relating to the interviews. However, P8 did feel that the asynchronous nature of AWO99 was an effective tool in induction into academic discourse.

## 6.6 Interviews

Of the two respondents to the questionnaire, one declined to be interviewed for this study.

The participant willing to be interviewed requested a telephone interview. The interview revealed that the participant found the asynchronous nature of CMC useful in allowing the course to be spread across other commitments.

Whilst the participant felt that AWO99 was not useful in induction into academic community, due to what was seen as a lack of personal interaction, s/he felt that, as a course, it provided a useful induction into academic writing. S/he already felt that s/he was a member of the academic community and found the main benefit of AWO99 to be its improvement of writing skills. S/he regarded the ability, afforded by the asynchronous nature of the conference, to print and refer back to previous postings as an advantage. This enabled her/him to make use of the Responses in her/his work. The asynchronous dialogue was useful then in providing input into her/his own work and in allowing reference to the dialogue around her/his own project when working on that task. The dialogue was therefore useful in the construction of her/his own academic written output.

### **6.7 Participant Observation**

Despite being a participant in the DJB group of AWO99, I have chosen to present my own observations here rather than risk unduly influencing any outcomes by filling in the questionnaire or using a self-interview. However, there is a considerable body of literature (see section 4.3) that justifies the input of participant observation.

My own observations were that a sense of community developed within the group. As a postgraduate seeking to develop my skills as an academic writer, I considered the exercise fruitful in a discussion of the characteristics of academic writing. The Responses from mentors were particularly useful. Commenting on other participants' work was useful in that it helped me to reflect on the nature of what is needed in academic discourse.

The dialogue was effective, as was previously noted, through a desire to help and discuss the nature of the academic exercise involved and a sense of community developed through both formal and informal writing. FirstClass ® conferencing system provided an opportunity to look not only at the group with which I was involved but also the other AWO99 groups, allowing for a wider participation in dialogue. Printing out the responses

to my postings allowed an opportunity for reflection on comments and postings. The asynchronous nature of the conferencing system provided the opportunity to review postings in context. However, the constraints of the medium meant that the opportunity for face-to-face interaction, in order to bounce ideas off others in a synchronous setting, was restricted. This meant that there was a loss of the immediate in the justifying of one's own argument. However, the affordances of the medium provided an opportunity for reflection before responding to others postings, hence allowing more considered, logical and relevant responsiveness.

### **6.8 Discussion**

The methods, as detailed in the previous chapter, prove effective in the analysis of this writing group and will therefore be applied to the larger group of data in order to provide a richer study. The next chapter will expand the study to incorporate the wider group of participants in AWO.

At the conclusion of Chapter Seven, analysis of this chapter and the one that follows will be discussed in relation to the research questions.

## **7. Study Two**

### **7.1 Introduction**

Following on from the methods used in Chapter Six, this chapter will widen the study through an examination of the larger AWO groups from 1999 - 2000 (AWO99) and the AWO group from 2000 – 2001 (AWO2K). It follows the outline of the previous chapter. A greater emphasis has been placed on dialogue, particularly as regards the AWO2K Study.

The sections are:

#### **7.1 Introduction**

#### **7.2 AWO99**

#### **7.3 Textual analysis**

##### **7.3.1 Common Ground**

##### **7.3.2 Participation**

#### **7.4 Grammar**

##### **7.4.1 Context**

##### **7.4.2 Field**

##### **7.4.3 Tenor**

##### **7.4.4 Mode**

##### **7.4.5 Ideational (Experiential) Metafunction**

##### **7.4.6 Interpersonal Metafunction**

##### **7.4.7 Textual Metafunction**

##### **7.4.8 Register**

##### **7.4.9 Text Type**

#### **7.5 Questionnaires**

#### **7.6 Interviews**

#### **7.7 AWO2K**

##### **7.7.1 Introduction**



7.7.2 AWO2K Psych/Health Group

7.7.3 AWO2K Green Room

7.7.4 AWO2K Language

7.7.5 AWO2K Language

7.7.6 AWO2K CMC Room

7.8 Discussion.

## **7.2 AWO99**

There were six writing groups within AW099 that were available to this study. (see Figure 7.1):

Triple Alliance

Extra1

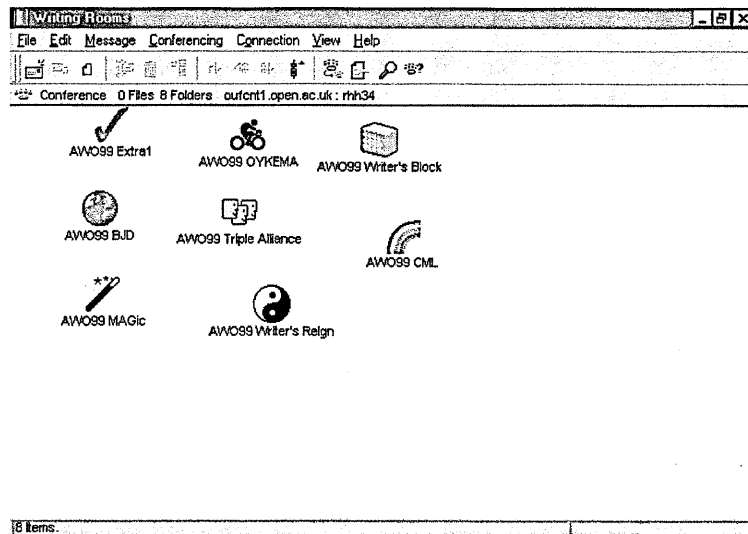
MAGic

Writer's Reign

BJD

Writer's Block

The groups CML and OYKEMA are not used, as the CML group was used by a particular dept (The Centre for Modern Languages) as an internal course for staff members and OYKEMA contained no data.



Writing rooms in AWO99 Figure 7.1

The letter P followed by a number (e.g. P1) identifies participants through this chapter. The date following the references indicated the date of the posting.

## 7.3 Textual Analysis

### 7.3.1 Common Ground

In the AW099 course, scaffolding, quotes and anaphoric references have been used to establish common ground. Anaphoric referencing is a feature of asynchronous CMC in that the posting being referred to is quoted to establish where it is positioned within the dialogue.

### 7.3.2 Participation

The breakdown for the various writing groups is as follows:

	Extra1	MAGic	Triple Alliance	Writer's Reign	BJD	Writer's Block
Total posts	40	56	24	30	66	3
	P10 = 10			P17 = 4	P8 = 8	P21 = 1
	P11 = 12	P14 = 9	P15 = 3	P18 = 5	P9 = 14	P22 = 2
	P12 = 7	P9 = 12	P16 = 5	P19 = 6	P7 = 14	
Participant's postings	P13 = 1	P3 = 26	P8 = 9	P20 = 1	P4 = 6	Total = 3
	Total = 30	Total = 47	Total = 17	Total = 16	Total = 42	
	(1 male, 3 female)	(All female)	(All female)	(All female)	(1 male, 3 female)	(1male, 1female)
I R C	I = 9	I = 14	I = 6	I = 4	I = 12	I = 2
(participants only)	R = 15	R = 19	R = 9	R = 7	R = 15	R = 0
	C = 6	C = 14	C = 2	C = 5	C = 15	C = 1
Normalised score on participant's postings	75	83.93	70.83	53.33	87.2	61.5

(Extra1 was the only group that finished the course given that one participant posted an extended proposal or finished conference paper. In this case, P11 provided an extended paper)

The total number of posts was 264.

The total number of participants was 19 (3 Male, 16 female).

Total posts from participants = 216.

There were 25 posts from the male participants and 192 posts from female participants.

The average count for the posts in terms of male and female participants was:

Male = 8.33 posts per participant

Female = 12 posts per participant

There is no significant difference in the postings according to gender ( $p = 0.5$ ). This is in contrast to the findings of David McConnell (1997), who found that males dominated the discussion of an online MBA course. However, the overall number of participants and, in particular, the number of males in this sample is too small to draw any significant conclusion from this result.

The groups, in descending order of the number of postings, were BJD, MAGic, Extra1, Writer's Reign, Triple Alliance and Writer's Block. This study will consequently have collected more data from MAGic and Extra1, the larger of the groups not examined previously in Chapter Six.

## **7.4 Grammar**

*Hi P12,*

*I've finally got around to posting some comments. I found your abstract very clear, and although you've used jargon it is all understandable (this is me speaking as a fellow psychologist in the same field!)*

*It's hard to comment really as I know about your work (what with sharing an office and all). The only major recommendation that I would make would be to shift a couple of paragraphs about whilst keeping most of the content the same. I shall write below in pink to show you the areas I mean*

Well, here's my attempt at an abstract - sorry it's a bit late!

Self-Esteem & Relationship Style: Implications for Mental Health

*Firstly I would think about joining the 2 initial paragraphs together - not a serious problem. Then I would be tempted to remove this initial combined paragraph and place it later on in your abstract at the end of your third paragraph (see below)*

This project explores the developmental links between early attachment experiences, subsequent self esteem, styles of relating to others and mental health. *(Maybe join up paragraphs here)* This research aims to clarify the processes by which negative or unrealistic feelings of self-esteem may be perpetuated by particular styles of relating to others and the possible influence of these on mental health. It also aims to clarify the processes by which messages regarding self esteem and relating to others may be transmitted to infants in interactions with parents.

*I like the way that the following paragraph outlines the research that supports the different elements involved in your research. Just as a point to note though, I've been reading in some of the other rooms that generally putting references into an abstract is not the done thing. I can see the point, however I myself have put in references and so will need to take on board this advice.*

Research shows that the ability to form and maintain close relationships contributes to positive self esteem and mental well being (e.g. Creamer (1994). It has also been suggested (e.g. Griffin and Bartholomew, 1994; Feeney and Noller, 1996) that both self esteem and expectations about others have their roots in early experiences of attachment with primary care-givers.

In support of this suggestion, associations have been found between type of parenting style experienced during childhood and later psychiatric disorder (e.g. Patrick et. al. 1994). Links have also been established between recall of poor maternal care, depression and

impaired ability to relate to others, (e.g. Birtchnell, J. 1993). In addition, Crandell (1997) has shown that parenting style is a strong medium of transmission regarding attachment related messages.

Bartholomew and her colleagues propose a model of attachment behaviour in which attachment behaviour is understood in terms of mental representations (inner working models) of self/other. These inner working models provide a framework through which individuals interpret and understand themselves and the social world.

*End of Paragraph 3: I would maybe consider inserting your first paragraph here. It would follow on very nicely from your paragraphs about the literature and would be the next step of your story. You may find it means you can cut a few sentences out as you splice it with the paragraph below (so as to avoid repetition). I hope that this makes some sense as I find it difficult to explain clearly at times!!!*

Consequently in the study proposed here, self esteem (representing cognitive and affective models of 'self') and expectations about others (representing cognitive and affective models of 'the other') will be investigated with regard to their influence on mental health.

*Being a person who writes very long sentences, I would gently suggest that maybe the following sentence could be made into two? (Oh dear, I do seem to have gone into the "pot calling kettle black" scenario!!!). Maybe describing the participants in the first sentence, and what you would be exploring in the second sentence?*

*Also after having to reduce my own abstract vastly for another task, this is one section which may be parted with if necessary - otherwise I am not too sure of the etiquette of putting this information within an abstract. Perhaps someone somewhere might clarify this?*

Individuals who have experienced mental health difficulties characterised either by delusions or by depression will take part in two related studies aimed at revealing possible variation in these self/other

cognitive models (or schema) and examining the types of behaviour associated with these.

*Again, I really like the way you write the next sentence and don't want to nit-pick (but it looks as though I am!) but you might want to make clear who the "parenting " aspect refers to, ie is the participants role of currently being a parent or to the participants earlier experiences of being parented? This could well be me being a bit slow here as you do discuss the parenting aspect in earlier paragraphs but I thought it could possibly be restated here for those like me with a memory like a goldfish!*

The studies will also look at developmental precursors of to these models of 'self' and 'other', particularly with regard to the role of parenting.

*No more suggestions, I think this last paragraph is excellent, very positive and the implications make the whole project a very worthy one.*

It is hoped that the findings from this research will contribute to the identification of the processes by which negative or unrealistic feelings of self-esteem may be perpetuated by particular styles of relating to others and the possible influence of these on mental health. In addition to this, consideration will be given to identifying the processes by which messages regarding self-esteem and relationships with others may be transmitted to infants during interactions with care-givers.

*Sorry for the essay, I hope it helps in some way,*

*Regards*

(P19 WR 20/04)

In analysing this text through SFG, the following discussion begins with the extralinguistic levels of discourse. It does this by looking at the context of the text and

then moves through to the linguistic levels of the discourse by looking at content and expression.

#### 7.4.1 Context

All texts are contained within the contexts of situation and culture. The field, tenor and mode of the discourse represent these. In order to try to work out what happens in the text, it is analysed from that perspective.

The following line occurs within the context of the bulletin board nature of AWO99.

*I've finally got around to posting some comments.*

The following line establishes an academic context:

*I found your abstract very clear, and although you've used jargon it is all understandable (this is me speaking as a fellow psychologist in the same field!)*

The following establishes an external context:

*It's hard to comment really as I know about your work (what with sharing an office and all).*

So there are a number of contexts within which the dialogue is occurring.

#### 7.4.2 Field

The participant is working within the fields of academic discourse. Indeed, it is an aim of AWO99 to induct participants into academic discursive practices. The field therefore



includes the long-term goal of collaborative learning and the short-term goal of responding to another participant's previous postings. S/he writes: "*I've finally got around to posting some comments*" expressing his/her intention to comment upon another participant's work and stating that s/he should have done it sooner. As a comment it apologises for lack of earlier participation and flags a commitment to further participation.

#### 7.4.3 Tenor

There are three intended recipients for this message. First, the person being responded to, second the members of the writing room, and third the larger audience participating in AWO99. . For example the history function of the server 1 (of 4 servers) browser indicates that the posting was read twenty-one times on one of the four servers. This only indicates those logged in through one of the four FirstClass ® servers on which AWO was conducted However, this indicates that a number of people are accessing the post and reading the dialogue that occurs.

The audience for the message was therefore larger than just the person addressed or the immediate members of the writing group. Nevertheless, responses overall seem skewed towards being addressed to the respondee rather than the group as a whole

#### 7.4.4 Mode

This text is written, but dialogic in that it incorporates the voice of the other in a linear reporting style. The writers employ a number of contractions, which would not be expected in formal written responses, e.g. the use of "it's" rather than "it is", or "you've" rather than "you have". The writers also do not exhibit a concern for correct pronunciation or spelling in their replies. There is a contrast between the more formal writing of the original extract and the more relaxed and less formal writing of the response.

#### 7.4.5 Ideational (Experiential) Metafunction

In order to examine the ideational function of this piece, I will examine the introduction posted:

	Participant	Process	Circumstance/Goal
1	I	've finally got around to posting (Material Process)	some comments
2	I	found (Projecting Process)	your abstract very clear
3	you	've used (Material Process)	jargon
4	this is me	speaking (Projecting Process)	as a fellow psychologist in the same field!
5	[for me]* It	s hard (Projecting Process)	to comment really
6	I	know (Projecting Process)	about your work
7	what with [us]*	sharing (Relational Process)	an office and all
8	The only major recommendation that I	would make would be (Material Process)	to shift a couple of paragraphs about
9	whilst [you]*	keeping (Material Process)	most of the content the same
10	I	shall wite (Material Process)	below in pink to show you the areas
11	I	Mean (Projecting Process)	

\*Square brackets add participants implied in the text but not specifically referred to.

There are five instances of Material Process, indicating action in the material world, five instances of Projecting Processes, indicating the inner world of speech or thought, and

one instance of a Relationship Process. The Relationship Process shows that the respondent is establishing a relationship with the original writer. However, the majority of processes are actions or thoughts in equal number. In addition, three Existential Processes in this piece simply declare the existence of the Actor.

There are eight instances of the head of the nominal groups being the respondent. Two heads of the nominal groups are the person to whom s/he (who?) is responding and one is both the respondent and respondee. While the text is establishing the author as the primary voice, it shows an awareness of the other and the relationship between the two of them.

#### 7.4.6 Interpersonal Metafunction

	Subject	Finite	Predicator
1	I	've (past)	finally got around to posting some comments
2	I	found? (past)	your abstract very clear
3	You	've (past)	used jargon
4	this is me	speaking (present)	as a fellow psychologist in the same field!
5	[for me]* It	's (present)	hard to comment really
6	I	know (present)	about your work
7	what with [us]*	sharing (present)	an office and all
8	The only major recommendation that I	would (present)	make would be to shift a couple of paragraphs about
9	whilst [you]*	keeping (future)	most of the content the same
10	I	shall (future)	Wite below in pink to show you the areas I mean

\*Square brackets add participants implied in the text but not specifically referred to.

In the above chart, the mood is declarative in all instances and is concerned with imparting information. Furthermore, all exchanges are made in a positive polarity.

The author's Comment Adjuncts (e.g., "finally", "it's hard to comment" and "the only") reveal a conciliatory attitude. P11/he is trying to establish that s/he has no more particular expertise than the respondee does and ensure that his/her critique is not seen as too harsh. This reinforces the collaborative and cooperative nature of the teaching and learning process in which the participants are engaged.

#### 7.4.7 Textual Metafunction

Clause	Theme	Rheme
1	I've finally got around to posting	some comments.
2	I found your abstract	very clear,
3	(this is me	speaking as a fellow psychologist in the same field!)
4	and although you've used jargon	it is all understandable
5	It's hard to comment	really as I know about your work
6	(what with sharing an office	and all).
7	The only major recommendation	that I would make
8	would be to shift a couple of paragraphs	about whilst keeping most of the content the same.
9	I shall wite	below in pink
10	to show you	the areas I mean:

There are four textual themes in this text – “and”, “although”, “what”, “with”, “would be” and “to” (clauses 4, 6, 8 and 10). To further break down the textual themes, "although" and "would" represent textual themes that introduce discussion and are part of a dialogical argument. This demonstrates the dialogical nature of the construction of knowledge that is occurring.

#### 7.4.8 Register

As the texts on AWO99 share the same experiential, interpersonal and textual meanings - that is they share the same purposes and relationships - they belong to the same register.

#### 7.4.9 Text Type

The text type in this piece falls into the category of Exposition in that it presents an argument. Below is a further example showing the structural features of this text type:

Structural features	
Position statement	Writing is frequently a fairly tortuous activity which I find requires different styles depending on the target audience.
Justification of arguments	I think that writing for a journal article requires a creative slant which is different to reports, and also needs to be a scholarly piece of work. This in turn is different to abstracts and papers that are to be refereed by reviewers in conferences. And this is again different in its needs and style to that which is appropriate for thesis writing.
Summary	I am currently a part-time Phd student, and I find I have to do all of these types of writing, frequently within the same week

(P23 - Lobby 25/3)

The AWO99 texts fall into a further two of the text type categories:

1. Information report, in that they present factual information, as in the following example chosen from the course introduction (known online as “the lobby”),

Structural features	
Opening statement	Academic Writing Online 1999 (AWO99) is a course designed to help post-graduate researchers with their own writing.
Sequential related statements	It has been developed by members of the four faculties of Education, IET, Technology and Social Science but it may be possible to include people from other faculties who wish to participate. This course will not teach 'good writing' in the abstract. What is and what is not considered to be good writing varies from journal to journal, reviewer to reviewer and PhD supervisor to PhD supervisor. Instead this course is about how to produce writing which is effective for a purpose. In the world of research effective writing is writing which is accepted by colleagues, often more established colleagues, as being of the right type and quality to allow you to go forward and participate in the knowledge community you are aiming at.
Concluding statement	This may mean getting published, it may mean presenting at a conference or it may simply mean continuing with research towards a PhD. Three kinds of texts will be supported on the course:

(P6 -Lobby 14/3)

2. Procedure, in that they show how something can be accomplished, as in the following example:

Structural features	
Statement of the aim	Some ground rules
Action	<p>On AWO we will all end up exposing ourselves a little. This applies as much to those commenting on work as it does to those putting up work for comment. If the course is going to work it is important that we all feel that it is safe to make mistakes. This means feeling that the others are not out to get us, to use our failings to bolster their self-esteem, but are trying to be constructive and helpful. To this end I propose that, for messages on AWO, we all agree to abide by a few simple ground rules.</p> <p>1 ) be relaxed and friendly A simple short spoken style of message seems to work best. Don't spend ages polishing clever messages or correcting spelings. (These rules do not apply to texts produced for comment where the best academic style should be used)</p> <p>2) speak from a viewpoint Try not to sound dogmatic. Point out that you are just expressing one view. 'I tend to think that ...' or 'I would prefer it if ..' or 'As so and so said in ..' will go down better than simple assertions.</p> <p>3) be positive If you need to criticise begin with whatever is positive and point out that you are offering suggestions for improvement. Avoid expressions such as: wrong, fail, error, never, rubbish etc</p> <p>4) please don't flame Read messages at least twice and allow time to calm down after receiving something you find offensive. If you really need to say something quite strong keep it private by sending it to a private mail address not to a conference area. But, if you can, try to acknowledge the other persons cause for concern and sound understanding - this usually calms things down.</p> <p>5) ask permission Always ask permission before forwarding or copying other people's messages.</p> <p>6) avoid SHOUTING! Upper case letters can seem a bit too LOUD for some of us, they are best avoided.</p> <p>This is a moderated site. If you participate it is on the understanding that you have read and agreed to these ground rules or at least to their spirit.</p>

While the Information Report and Procedure postings are monological and do not seek response, dialogue is occurring in the Expository postings, in that they take a position regarding an argument. In order to take a position, the participant must be aware of the voice of the other or else there would be no requirement for a justification of arguments. However, the Information and Procedure posts are part of the dialogue, as they set out common ground for participants. While there is no response to these posts, they do set out the position of the course and, as such, do enter into the dialogue. These ground rules can even be seen to be dialogically constructed themselves, as they draw on earlier research on effective communication and online teaching. As such, they form part of a wider discourse on teaching and learning through CMC.

### **7.5 Questionnaires**

Analysis of questionnaire responses produced the following results.

- Statement 1 No strong feelings; evenly split between disagree, neutral and agree.
- Statement 2 Half negative, half neutral responses.
- Statement 3 Very non-committal; 83.3% of responses neither agree nor disagree.
- Statement 4 1/3 neither agree nor disagree, 2/3 agree.
- Statement 5 Half disagree with this negative statement, but half agree. There is a disagreement about how effective interaction within the writing room was.
- Statement 6 Response is evenly spread. (Between all categories of response)
- Statement 7 Evenly split (1/3 each) between disagree, neutral and agree.
- Statement 8 A negative statement; 1/3 felt comments from mentors were useful, 1/3 felt they were no use and 1/6 were neutral.



## **7.6 Interviews**

Interviews were conducted with participants in May and June 2001, two years after students had completed the course. This meant that they had made significant progress in their research.

Interviews with participants revealed that their perceptions indicated that the main pedagogical benefits received were not from comments from other participants, but from their own comments on the work of others and from comments from mentors. It was felt that other participants were not sufficiently advanced to help.

Other participants, it was claimed, were more concerned about the form of the postings, rather than the content of the material. The argument that learning often occurs through teaching others is supported by the participants' feelings that commenting on the work of others was a useful learning process. The pedagogical benefit of comments from mentors demonstrates the Vygotskian concept of ZPG. The more experienced mentors were able to support the learners and help them to achieve greater progress through their ZPG. So, in this instance, CMC can be more effective in a community with participants with a range of levels of experience than in one where the participants are all on an equal academic footing.

Having examined AWO99 in detail, a further study looked at another course for comparison. It was considered most profitable to look for the voice of the other in the next study, in order to seek the dialogical nature of cognition.

## **7.7 AWO2K**

### **7.7.1 Introduction**

This study will now focus on an examination of the content provided by the postings of the AWO writing groups within the year 2000-2001. During this year, five writing groups were active. The total number of contributors to all five groups was sixteen. Thirteen of these were participants and three were mentors. Of the sixteen members involved in the five groups, fifteen were postgraduate students and academic staff at the Open University. The remaining participant was contributing as a postgraduate student from another tertiary educational institution.

It is relevant to point out that while four of the writing groups were unique to AWO2K, there was one group originally created for AWO99 which was continued into the 2000-2001 time period at the request of the participants.

### **7.7.2 AWO2K Psych/Health Group**

This group comprised 13 postings. The number of postings provided by each contributor can be broken down in the following way:

P24 = 4 postings

P16 = 1 posting

P25 = 1 posting

P26 = 1 posting

P27 = 1 posting

P6 = 4 postings

In addition to these postings, there was one administrative posting.

It is worth pointing out that P24 and P25 were participants, P6 was a mentor and P27 and P26 were guests contributing to this particular group from other writing groups. The ability to visit other writing groups is one of the affordances of this particular style of conferencing. This effectively promotes a wider dialogical base.

The data provided above can be further broken down to show five postings specific to Initiation and seven postings specific to Response. In this instance there were no Chat posts.

Further examination of the content taken from each of the postings provides an insight into the learning processes at play, as well as the development of the interaction between each of the participants.

If we look at P24's postings, it is evident that s/he is a participant who undertakes to alter his/ her work as a result of comments made by other participants. The occurrence of this process is exemplified in another participant's comments (5/4/00) to P24, where s/he states that " ... maybe a little more could be said about the theoretical framework?". This resulted in P24's subsequent response incorporating an additional sentence.

Drawing on feminist theory, biographical theory and discourse analysis, the research interrogates the functioning of the discourses drawn upon, looking particularly at the use of generational and gendered talk. (P24)

P6 (19/4/00) clearly states that it necessary to include a more qualitative analysis in research, adding that interrogation alone would not be sufficient. Taking up this particular point, P24 (30/6/00) quotes Minichiello and Plummer's (1995) argument that there is a need for more qualitative research that looks at the meanings of sexuality for the elderly. P24 also highlights how his / her paper will improve on the findings of Minichiello and Plummer. Within this posting, although P24 takes into account the comments made by

P27 (5/3/00) s/he also sees fit to provide further details on relevant research projects conducted over the last few decades

The CMC medium provides participants with the opportunity to formulate their replies by incorporating previous postings, in addition to adding their own comments. An example that provides evidence of this occurring can be seen in the following extract, taken from a dialogue involving P6 and P25.

**P25 writes:**

>I think that the answer to the above question is probably no - more of an >introduction. See what you think!

**Do you have a title?**

>The aims of the study centre around the issue of empowering people with >diabetes. Empowerment is an important concept in diabetes because it is a >condition usually self-managed by the person themselves, assuming that >they are not institutionalised. On a continuum, empowerment equates with >autonomy at one end, with fostered dependency and learned helplessness at >the other.

[bit unclear - There is a continuum with x at one end and y at the other] >This

[the continuum does? not really - need clearer reference]

>raises issues about the balance of power between professionals and also >those who are affected by it.

[again could be spelt out more who you mean and the issue you are referring to] (P6 19/4/00).

Incorporated within this posting, P6 (19/4/00) advises P24 that s/he should refrain from using the term 'discourse', given that it is evident that s/he shows uncertainty as to the

context in which the term is used. Consequently, P24 makes the decision to amend his / her work by removing almost every reference to discourse. In addition to this, P24 (30/6/00) amends the title of the work from “What discourses do older women ...” to read “Older women taking about ...”. Furthermore, in accordance to a suggestion made by P6 (19/4/00), P24 also makes the decision to delete the hyphen present in the original title.

Closer examination provides further evidence of amendments resulting from comments made by other participants. P24 (30/6/00) decides to adopt another of P6’s (2/5/00) suggestions, this time regarding a reference to Wetherall, which P24 had incorporated in his / her work. P6 had pointed out that P24 “... could say that provisional analysis has found and explored the following assumptions ...”. P24 (30/6/00) subsequently makes the required changes to his / her paper and responds by stating that “In the data obtained so far, several respondents use an interpretative repertoire ... later speech tend to equate ...”. The posting continues in some detail and provides examples from a number of respondents. In line with P6, P11 comments about ‘provisional analysis’, P24’s final paragraph begins by stating that “These initial findings have begun to map out some of the interpretative repertoires ... This paper has also begun to analyse some of the ways ...”.

The examples provided above show evidence that the voice of the ‘other’ is increasingly being incorporated into the writing of the participants.

### 7.7.3 AWO2K Green Room

The AWO2K Green Room group consisted of 16 postings. The number of postings provided by each contributor can be broken down in the following way:

P28 = 4 postings

P27 = 3 postings

P29 = 2 postings

P24 = 1 posting

P6 = 5 postings

In addition to these postings, there was one administrative posting.

Of those who contributed to this group, P6 was a mentor, P28, P27 and P29 were participants and P24 was a visitor who belonged to another group but who became a contributor to the AWO2K Green Room. One of the affordances of groups such as this, those that take on the style of a Bulletin Board, is that they provide participants from other groups with the opportunity to include their own contributions. In this particular case, our subject is P24. S/he is primarily a participant of the Psych/Health group, but is able to provide his / her own contributions to the AWO2K Green Room.

As an active participant in more than one group, it is interesting that P24 provides the most evidence of the dialogical construction of discursive practice.

While there are nine responses to five initiations within this writing group (and one chat) there is no evidence that corrected initiations were re-posted. Therefore, we are led to assume that the participation occurring here is each participant responding to the work of others within the group. In contrast to the first group mentioned in this chapter, the AWO2K Psych/Health group, the form of discourse occurring within the AWO2K Green Room does not afford the researcher with any immediate evidence of the voice of the 'other' being incorporated into the work of those taking part.

#### 7.7.4 AWO2K Language

The AWO2K Language group consisted of 8 postings. The number of postings provided by each contributor can be broken down in the following way:

P30 = 3 postings

P28 = 2 posting

P31 = 1 posting

P6 = 1 posting

In addition to these postings, there was one administrative posting.

Of those who contributed to this particular group, P6 was a mentor, P30 was a participant, P28 was a guest from another writing room and P31 was a technical administrator.

The data provided above can be further broken down to show 1 posting specific to Initiation, 6 postings specific to Response and 1 posting specific to Chat.

It is evident that this writing room was subject to the limitation of having only one participant. The result is that not one of the submissions showed any signs of re-writes being made to the initiation. However, there is evidence of future intent in P28's response to P6. To quote this particular reply, "Thank you very much for your encouraging and practical comments. I have just read them ... and I am sure they will be most helpful in re-writing my abstract ...".

#### 7.7.5 AWO2K CMC Room

The AWO2K CMC group consisted of 47 postings. The number of postings provided by each contributor can be broken down in the following way:

P32 = 2 postings

P31 = 1 posting

P6 = 14 postings

P1 = 13 postings

P33 = 9 postings

P5 = 5

P34 = 1 posting

P19 = 1 posting

In addition to these postings, there was one administrative posting.

Of those who contributed to this group, P6 was a mentor, P1, P33, P32, P31 and P5 were participants, and P34 and P19 were guests from another group, who decided to contribute to this particular group.

The AWO2K CMC room was the aforementioned case of a group being continued from a previous year. Consequently, this room covered the years 1999-2000 and 2000-2001. However, of the total number of postings made during this period, those relevant to 2000-2001 amounted to four, with the addition of one administrative posting.

The mentor was a participant in both years. P1, P33 and P5 provided contributions to the period covering 1999. P32 and P31 both participated during the period covering the year 2000-2001

In the academic year 1999-2000, the total number of postings reached 42. During the year 2000-2001, there were five postings submitted. The fact that the carry-over of participants from one year to the next was so much less reflects the transitory nature of this medium. It also highlights the needs of participants at different stages of their research.

P33 was a postgraduate student from another institution. This in itself reflects the affordances of the CMC medium in allowing participation from those who are constrained by space in a face-to-face discussion. Several times during the discussion, we find that P33 provides responses to postings from other participants on the very same day



that they have submitted their postings. This reflects the ability of this medium to overcome the time constraints experienced by normal mail in such a discussion.

P1 makes the following comment:

Therefore, it can be said that this conference extends our ZPD (zone of proximal development).

I think that this conference functions as a tool (to speak in Vygotskian terms), in a parallel way that a book would help me learn, adding to the benefits of being interactively involved in the discussion, and exchanging views on issues that we jointly decide and not merely absorbing the author's ideas. (I have used the book because it is an object).

Other people's ideas can be signs' which provide stimuli for the discussion. The electronic messages that we send each other (mediated activity) may promote understanding. (P1 20/4/99)

The same participant embraces the medium as an opportunity to work collaboratively "I think we'll be able to collaborate if we can form a group with people who work on the same area" (P1 31/3/00). This is asking for the dialogue to be subject based not generally based on academic writing. This could be a point for future research (differences in effectiveness of general Vs specific groupings/communities/genres in CMC).

Following comments from another participant (P5), P1 (20/4/99) writes "It sounds like a good idea, I will see how it works." This comment demonstrates the collaborative working practices between participants in their efforts to include the voices of the other participants in their own work. In the same posting, P1 writes of how he/she will be incorporating P5's comments in to his / her own work "I suppose in need to rephrase this hypothesis. Thanks for making me conscious about this." (P1 20/4/99). In a later posting P1 can be seen to have incorporated comments made on his / her abstracts (P1 21/5/99). The comments were made by P5 (19/4/99) and included a suggestion on the layout of the

paper, first presenting methodology and secondly why the outcomes are important. The rewritten text follows this advice.

Incorporation of the voice of the other is further evident in the following two abstracts: Here P33 has commented on P1's abstract by submitting the following comment:

>This paper presents the key findings of the study and puts forward  
evidence >to support them

I am not sure you need this – what else can papers do?

In response, P1 states: "I don't think that there is anything wrong about writing":

>This paper presents the key findings of the study

I have seen this in many abstracts published. You are probably right  
about the second phrase of the sentence. (P1 20/5/99)

This example highlights the discussion between collaboratively working participants surrounding the incorporation of comments made by others. While P1 rejects one of P33's comments, s/he endorses and subsequently incorporates the other comment made.

Vygotsky presented us with the concept that what is done with the assistance of others is more indicative of mental development than what is done alone (Vygotsky 1962, p.113; Vygotsky 1978, p.114). P33 sees fit to comment on this by making the following statement on the way in which the theory is pertinent to the participation within the group.

I think we have an example in our conference – people assist one  
another in a way that engenders personal development, contributing to  
the joint development of ideas. (P33 19/4/99)

#### 7.7.6 AWO2K Self Starters

The AWO2K Self Starters group consisted of 14 postings. The number of postings provided by each contributor can be broken down in the following way:

P35 = 2 postings

P6 = 4 postings

P36 = 3 postings

P25 = 1 posting

P26 = 3 postings

In addition to these postings, there was one administrative posting.

Of those who contributed to the AWO2K group, P36 and P26 were participants and P35, P25 and P6 were mentors.

The data provided above can be further broken down to show two postings specific to Initiation, six postings specific to Response and two postings specific to Chat.

#### **7.8 Discussion**

This study has shown that CMC can effectively promote collaborative learning. However, this is dependent upon effective participation by both students and mentors. As a new technology, there is some resistance to accepting different styles of pedagogical delivery from both academics and postgraduate students.

The above evidence provides a clear indication that CMC can indeed facilitate collaborative learning between the participants taking part in the different writing groups. This was shown particularly in the examination of the postings from the Psych/Health

writing group and in the fact that there were obvious signs of participation from guests belonging to other writings groups within groups discussed in the body of this chapter.

In addition to this, there was evidence within the body of texts that participants made use of the opportunity to incorporate the voices of other participants in their own work. The asynchronous CMC medium was instrumental in facilitating this concept of incorporation through the printing of work and a degree of reflection on the comments of respondents to posts that had been initiated by participants.

The findings of this study have also provided evidence of a negotiated process of discussion and collaboration. By looking at the texts submitted within the writing groups, it can be shown that initial postings were re-worked as a direct result of postings made by other participants.

The CMC medium affords the opportunity for rapid response in much the same way as it occurs in spoken communication. It also offers the ability to store and retrieve messages in the same way as written communication. CMC can therefore be seen to provide a new medium of communication through the negotiation of the affordances of both spoken and written communication.

The Bulletin Board style of the postings within each group gave participants from other groups the opportunity to enter into specific discussions. This would not have been possible in face-to-face discussion groups. In a similar way, written communications that are addressed to particular participants would also exclude guests from other groups. The CMC medium facilitates a form of collaboration that allows for the inclusion of those outside the primary writing groups.

The occurrence of collaborative participation within the AW02K groups works hand-in-hand with traditional methods of teaching and learning. These include oral and written feedback from supervisors, peers and friends. At the same time, it also makes the

collaborative process somewhat transparent and, as such, it allows the participant to do a number of things. They are able to return to electronically stored postings and to print out and read the work and responses submitted by other participants. Finally, they are able to participate in the discussion at times that are suitable and appropriate to their own particular circumstances. As such, CMC provides a flexible medium that encourages and facilitates participation and collaboration according to the pace and needs of each individual participant in these studies.

In addition to overcoming the constraints of time, the nature of the CMC used allows for the participation within the discussion groups of those who are not located at any one campus. In so doing, it overcomes the constraints of space. The case most pertinent to this overcoming of the constraints of space is that of P33, who was a student from another institution.

I will now revisit the research.

1. Is asynchronous CMC an effective tool for induction into a discourse community?

In a similar way to that shown in Study One, this study has demonstrated that asynchronous CMC is an effective tool for induction into a discourse community. The finding is supported through the dialogical structure of postings shown and through the results of the questionnaires and the findings of the interviews. The effectiveness of CMC as a tool for induction in to academic discourse has been shown through the fact that the dialogue occurs around the academic writing on the course and is supported by the examples of the appropriation of the voice of the other in each participant's academic writing.

2. Can CMC effectively promote the development of academic argument?

This study has examined how the function of language differs between non-academic and academic writings. It shows that the stylistic differences can be more easily identified as formal or informal, rather than as spoken or written. The AWO2K study, in contrast to the other studies, can demonstrate an appropriation of the voice of the other in academic writing.

3. Does participation in online learning help contributors construct a community of learners?

As previously discussed, the notion of “community” in online learning is problematic. However, if we accept that communities form through working collaboratively and having common ground, the study does demonstrate the establishment of common knowledge and therefore helps to construct a community of discourse.

4. How does dialogue in CMC collaboratively construct knowledge?

The collaborative construction of knowledge through CMC can only be established when common ground is established first. Common ground is essential for the construction of common knowledge. When common ground is established, CMC can be seen to be an effective tool in the joint construction of knowledge. It has been shown in these studies that this knowledge is constructed dialogically. It has also been shown that asynchronous communication is effective in the process of collaborative learning.

These findings are considered in the next chapter in the context of the overall thesis and the contributions this research has made to the field.

## **8 Conclusions**

This chapter presents the conclusions and summary of this thesis. It also sets out a summary of the contributions of the research. Secondly, the limitations of the research are examined. These include an examination of the limitations of the research methods employed. The research questions are then revisited in the light of the findings presented. This is followed by a presentation of the implications for future research. The chapter concludes with a brief summary of the work. It is set out as:

### **8.1 Contributions to the field**

### **8.2 Limitations of this research**

#### **8.2.1 General limitations of this research**

#### **8.2.2 Limitations in design**

### **8.3 Research questions**

### **8.3 Future research**

### **8.4 Summary**

### ***8.1 Contributions to the field***

The research has provided an exploratory study of the affordances of CMC in teaching and learning. It has investigated how the nature of the medium impacts upon cognition for post-graduate research students in tertiary education. It also investigates the use of CMC in collaborative learning and the construction of academic literacy.

The interaction between pedagogical tools and cognition has been examined and it has been shown that those tools do impact upon cognition according to the cultural use of those tools. The studies presented an investigation into the use of CMC and showed that CMC can provide an effective tool for collaborative construction of academic language. However this is dependant upon effective communication between participants and the participants' commitment to the task of on-line collaboration.

The effectiveness of the medium also relies upon effective participation on the part of mentors or more experienced participants in the discursive practice of academic language. In order for effective collaboration to occur therefore there must be a commitment to collaboration by all participants. Indeed, CMC has the potential to change the role of the instructor from merely a disseminator of information and evaluation to that of a collaborator. As such it demonstrates a strong potential for induction into a community of discursive practice.

Vygotsky (1962, 1978) and McLuhan (1963) claimed that language is a tool that increases understanding of the social world and enables the user to transcend physical limitations. CMC involves students in participation in the learning process and so permits the student to make learning a more active procedure, engaging the help of others, increasing the zone of proximal development and ultimately helping him/her to learn effectively.

## **8.2 Limitations of this research**

This research has been subject to a number of limitations, which are described here. Firstly, the overall limitations of the project are described. Secondly, the limitations of the study design are considered.

### **8.2.1 General limitations of this research**

The project involved mature students working on post-graduate research projects at the Open University. While not all students were physically located on the Open University's Walton Hall campus, a large number were. This impacted upon the study in terms of its relevance to distance study. However, as not all participants were physically located within the campus, it does allow an examination of the use of CMC in creating a community between on and off campus students. Also, as the students were drawn from a



range of disciplines, the study could show the effectiveness of CMC in a multi-disciplinary academic teaching and learning environment.

Problems were also observed during the course in relation to the participation of mentors. Academic staff in Universities often feel the burden of heavy workloads and participation in AWO courses was extra to those workloads. In addition some academic staff expressed uncertainty about the benefits of on-line work.

This thesis has largely avoided gender and socio-economic issues as they are outside the scope of this thesis. While a small amount of information was gleaned about gender in the findings presented, it was felt that such issues are large enough to warrant more study than could be presented in the field of this project. Those issues are acknowledged as important issues for research and certainly present a direction for further research in the area.

Cynthia Selfe (1992) warns that, in some instances. CMC can contribute to "intellectual isolation, competitiveness and the continued oppression of women and minorities" (p. 30). Selfe claims that there are "differential patterns of access to technology in our schools for whites and non-whites" (p. 31). Her study showed that middle and upper class students have more computers than their lower socio-economic class peers. When poorer students have access to computers, they tend to use them more for skill and drill exercises than networked communication. This perpetuation of the marginalisation between socio-economic classes is probably not intentional, Selfe suggests, but due more to a lack of thorough research into how such disparities occur.

Another issue that became apparent in the course of this research project was reluctance on the part of some participants to involve themselves in collaborative learning. This could be due to traditional pedagogical methods having focussed on individual cognition rather than the development of cognition through social processes. There was reluctance by some participants, expressed in interviews, to accept comment from peers, preferring

the 'expert' feedback of tutors. While those participants saw value in their own comments on others work, they were reticent to accept comment on their own work from other students.

### 8.2.2 Limitations in design

The finished work of the participants was not available so it was not possible to consider the full impact of incorporation of the voice of the other in the finished work of the students. There was a lack of final papers being made available by participants for this research. Few of the participants completed the course successfully and, consequently, it was difficult to track the voice of the other in an empirical manner.

## 8.3 Research questions

To reiterate, the research questions presented in this thesis were:

Is asynchronous CMC an effective tool for facilitating induction into a discourse community?

Can CMC effectively promote the development of academic argument?

Does participation in on-line learning construct a community of learners?

How does dialogue in CMC collaboratively construct knowledge?

In respect of the first question it would appear that CMC has the potential to be an effective tool for facilitating induction into a discourse community. However, the tool needs to be used in conjunction with more experienced members of the discursive community. In order for effective induction to occur, those who have been constructed as members of the community through discourse must assist inductees to reach the appropriate ZPD for their effective induction into the discursive practice of the academic community.

The effective promotion of academic argument does appear to be assisted through CMC. However the argument takes place within a wider social setting and CMC can only be seen as a tool used in conjunction with other tools such as speech, writing, reading to effectively promote the development of academic argument.

In order for a successful community of online learning to develop, it would seem that the community must work effectively in a collaborative manner and be committed to the development of a community of learners. One respondent noted the affordance of CMC for those who are disabled and consequently unable to enter into face-to-face dialogue due to the constraints of place. Various researchers have previously noted the equal opportunities afforded by CMC (Lamy and Goodfellow, 1999; Ortega, 1997; Warschauer, 1998).

The collaborative dialogue that is occurring within CMC can be seen to effectively construct knowledge. It is through the dialogical collaboration that the ZPD is extended within the learners and so new knowledge is constructed. CMC also allows for reflection on the content and process. Interviewees reported printing off documents to read other's posts to allow them to consider those posts and respond accordingly. Printouts also allowed for reflection and incorporation of the respondent's voice.

### **8.3 Future research**

There are many aspects of this research that could be further pursued. A number of questions arise from the limitations of research set out earlier. These are explored here.

Future research could compare on campus participants and isolated distance learners and the impact of offline collaboration on the work of students working collaboratively online.

A longitudinal study could follow students through their academic careers and examine in detail the impact of the voice of the other as presented through CMC collaboration on the finished work of students. This research could involve undergraduate students new to academic discourse and consider the effectiveness of CMC as a tool for induction into a community of discourse. As post-graduate students are to some extent aware of academic discursive practice, the study of undergraduates could help to chart the induction of relatively newer members of a community of discursive practice. Such a study could also consider the impact of age issues in comparing mature students and school leavers working collaboratively.

Additionally, data could be gathered comparing different media for collaborative work. Much research has been done on collaborative work on computers offline. A study could be conducted comparing collaborative work in online and offline environments.

Other areas of research could include a study that considers socio-economic and gender considerations in the use of CMC as a collaborative medium. Similarly studies could be conducted on an ethnic-cultural basis. While there have been previous studies of non-native English speakers' use of CMC as a collaborative learning tool, further research could be conducted comparing the effectiveness of CMC in collaborative learning for native and non-native speakers of English. Such research may be particularly interesting, given the dominance of English as the language of CMC.

#### **8.4 Summary**

CMC is increasing in popularity amongst educators. Courses are increasingly available online and communication via e-mail or chatrooms encouraged. The OU was the pioneer of distance education using the media of radio, television, video and audio cassettes. However, today, even the OU are becoming aware of the fact that, with the advent of the internet as a tool, it is now possible to explore methods of delivery that are more appropriate, given the advances and increasingly easier access to modern technologies

such as these. The old BBC / OU charter is no longer the most viable option and BBC output / involvement is currently being phased down. While the use of CMC is at an early stage in teaching and learning, it is imperative that the constraints and affordances of the medium be fully explored.

This thesis has examined how teaching and learning is affected by the use of CMC, how computers can be used to promote collaborative learning amongst adult learners and the role of CMC in developing written argument.

As a tool for collaborative learning, CMC has strong potential. If presented within pedagogy, sensitivity to its potential and a willingness to be flexible, computer-mediated communication can provide an effective tool for collaborative learning.

CMC in the teaching and learning process has had undeniable effects. The effects upon cognition may mean a shift away from the print consciousness of the isolated learner towards a new form of cognition that recognises the collaborative construction of knowledge and the incorporation of the voice of the other in a dialogical construction of cognition. As such it may be seen to represent a synthesis between the thesis of monological (print) medium and antithesis of the dialogical (speech) medium.

This thesis has argued that CMC has broken down the distinction between talking and writing. CMC has provided new literacies or a 'secondary orality'. It has shown, through an analysis of online learning that the construction of knowledge through CMC provides a return to dialogue at a different level of mediation than that used in primary orality and reveals the shift from monological to dialogical context in induction into a community of discourse.

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## **Appendix 1**

### **QUESTIONNAIRE ABOUT AWO**

Thankyou for taking the time to respond to this questionnaire. It will take you approximately ten to fifteen minutes to complete. There are two separate parts to the questionnaire. The first asks you to rate your responses to various statements and the second asks for more detailed answers. It can be returned electronically to [r.a.hope-hume@open.ac.uk](mailto:r.a.hope-hume@open.ac.uk) or by mail to:

Bob Hope-Hume

CLAC

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Please feel free to contact me on 01908 655010 or by email if you have any queries.

Once again thanks very much for your help.

In this questionnaire, you will be asked to respond to a range of questions on a scale of one to five.

- 1. = strongly disagree with the statement**
- 2. = disagree with the statement**
- 3. = neither agree nor disagree with the statement**
- 4. = agree with the statement**
- 5. = strongly agree with the statement**

Please tick the appropriate box.

	1 Strongly disagree with the statement	2 disagree with the statement	3 neither agree nor disagree with the statement	4 agree with the statement	5 strongly agree with the statement
AWO was effective in developing my academic writing skills					
Peer interaction in AWO was effective in developing my academic writing					
Comments from peers were useful aides to my writing skills					
It was useful in developing my own academic writing skills to make comments on others writing					
The interaction amongst peers in my writing room was not effective					
The majority of the members in my writing room made significant contributions to the room					
AWO represented the writing needs of my discipline					
Comments from mentors on AWO were not useful to my writing skills					
	1 Strongly disagree with the statement	2 disagree with the statement	3 neither agree nor disagree with the statement	4 agree with the statement	5 strongly agree with the statement

The second part of this questionnaire asks you to respond to six questions. Please feel free to answer in as much detail as you wish. Should you wish to write more than is provided for in the spaces on this sheet, please feel free to attach further sheets to your response.

What did you hope to achieve through AWO?

Did AWO help you to achieve this? How? (Please elaborate on reasons)

Did AWO help you to learn about academic literacy? How? (Please elaborate)

Did AWO help you to feel that you are a member of academic community?

Did you feel that the use of asynchronous (the discussion could be accessed at any time)  
Computer Mediated Communication in AWO provided an effective tool for induction  
into academic discourse?

Were there any particular positive or negative aspects of Computer Mediated Communication in the course?

Is there any other issue you would like to raise about AWO?

I am/am not willing to be contacted for further interviewing. (Please delete as appropriate.

Name (optional)

Contact number (Optional)

E-mail address (Optional)

Thankyou for your time.

## Appendix 2

### *Examples of Social Modes of Thought*

#### **Disputational Talk**

Stuart: I'm getting fed up with this. Where's mine, five

Len: You have just done eight fives going away (reads from screen) 'you are getting close', 'getting close'. You have done it, you have just done it, dickhead, you have just done it - look!

Stuart: That's not my one.

Len: That was. That was mine, that was yours

Stuart: Look I'll prove it.

Len: Look: I've done that one, you have done that one, I have done that one, you have done that one. No you have done that one.

Although in this exercise each boy learns from the others mistakes, they nonetheless each claim to have 'won' when they hit upon the object in their own turn.

#### **Cumulative Talk**

In this sequence, two girls are involved in a joint writing task. Notice the repetitions and the confirmations.

Sally: Yeah. What if she says erm erm "All right, yeah."? No, just put "Yeah all right."  
No, no.

Emma: (laughs) No. "Well I suppose I could..."

Sally: "...spare 15p." Yeah?

Emma: Yeah.

Sally: "I suppose..."

Emma: "I suppose I could spare 50p."

Sally: "50?"

Emma: Yeah. "Spare 50 pence."

Sally: "50 pence."

Emma: "50 pence. "And Angela says "That isn't enough I want to buy something else."

Sally: Yeah, no no. "I want a drink as well you know I want some coke as well".

Emma: "That isn't enough for bubble gum and some coke."

Sally: Yeah, yeah.

### **Exploratory Talk**

In this sequence two nine year old children discuss a moral issue presented by a hypertext narrative on a computer. Where we join them the heroine of the computer story, Kate, has been told by her friend that he has stolen a box of chocolates to give to his mother for her birthday. The children now have to decide whether Kate should tell her parents or not.

Susan: So what do you think - 'cos is it bad, stealing? Do you think?

Adrian: No 'cos he was doing it for his mum.

Susan: But I think that's stupid 'cos he could always get some money couldn't he?

Adrian: No.

Susan: Even off his grandparents or something?

Adrian: No but his grandparents might of died mightn't they?

Susan: Oh yeah.

Susan: So we go for yours yeah?

Adrian: Doesn't tell.

Susan: Doesn't tell. (Wegerif, 1997).